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1120. TASCHDJIAN (CLAIRE L.). **Resistance of *Trichophyton rubrum* and *Microsporum audouini* to two-hydroxystilbamidine induced in vitro.**—*J. invest. Derm.*, 23, 5, pp. 385–388, 1954.

In experiments at the University Post-Graduate Medical School and the Skin and Cancer Unit of the University Hospital, New York, with ten strains of *Trichophyton rubrum* and six of *Microsporum audouini*, it was shown that, by exposure *in vitro* to gradually increasing concentrations of 2-hydroxystilbamidine the average resistance of *T. rubrum* increased by the non-significant amount of 7.27 per cent., while that of *M. audouini* increased significantly by 43.6 per cent.

1121. TORRE (D.) & LEWIS (G. M.). **Practical approach to management of superficial fungous infections.**—*N. Y. St. J. Med.*, 54, 14, pp. 2068–2073, 5 figs., 1954.

Practical guidance for the management of superficial fungous infections is given, with special reference to differential diagnosis by clinical aspects. Information is also presented on the application of Wood's light, direct microscopic examination, and culture, concluding with a formulary for treatment based on the location of the lesions and the state of inflammation, and brief observations on physical therapy.

1122. WILSON (J. W.), PLUNKETT (O. A.), & GREGERSON (A.). **Nodular granulomatous perifolliculitis of the legs caused by *Trichophyton rubrum*.**—*Arch. Derm. Syph.*, Chicago, 69, 3, pp. 258–277, 4 figs., 1954.

This is a report from the Universities of Southern California and California (Los Angeles) of a study of 14 cases of chronic nodular infiltration of the entire thickness of the skin surrounding infected hair follicles, usually involving the lower part of one leg of dark-haired women. Histologically the nodules showed necrosis of the hair follicle and infiltration by epithelioid and giant cells, fibroblasts, lymphocytes, and plasma cells. Small abscesses were occasionally present. *Trichophyton rubrum*, isolated from all the cases, appeared mostly as an ectothrix, but hyphae and chains of arthrospores were seen inside a number of hairs. Treatment consisted of a combination of iodides, X-ray therapy, and topical fungicidal applications, which had to be continued over a long period to prevent recurrence. The similarity of the lesions to Majocchi's trichophytic granuloma of hairy skin is noted.

1123. CREMER (G.). **A special granulomatous form of mycosis on the lower legs caused by *Trichophyton rubrum* Castellani.**—*Dermatologica*, Basel, 107, 1, pp. 28–37, 5 figs., 1953. [German and French summaries.]

Trichophyton rubrum was found to be the principal agent of tinea pedis in an investigation of the complaint in Amsterdam, Holland, during 1951–2, having been isolated from 74 out of 104 cases compared with 29 of *T. inter-*

digitale and one of *Epidermophyton floccosum*. *T. rubrum* was also responsible for follicular inflammation of the lower legs in 14 patients (all females except one). In their most severe form the infiltrations simulated Majocchi's granuloma trichophyticum. Littman's medium [1, No. 847] proved useful in the differential diagnosis of *T. rubrum* and *T. interdigitale*.

1124. INMAN (P.). **Favus of the scalp with unusual epidemiological features.**—*Brit. J. Derm.*, 66, 11, pp. 409–410, 1954.

From the Sunderland and West Hartlepool district a case of scalp favus due to *Trichophyton schoenleini* is described in a 49-year-old female inmate of a mental defectives' home. For 17 years no contact case occurred in the other inmates although there is strong evidence that the patient suffered from scalp favus during this period. Two outbreaks of contact cases occurred in the eighteenth year and it is suspected that the fungicidal ointment applied was responsible for their development, as well as for the spread of the disease on the original patient's scalp.

1125. MULLINS (J. F.). **Trichophyton tonsurans infection in tinea capitis survey.**—*Arch. Derm. Syph.*, Chicago, 69, 4, pp. 438–440, 1954.

A survey of 3,365 school-children at Phoenix, Arizona, revealed the presence of tinea capitis in 32, in three of whom the causal organism was *Trichophyton tonsurans*. The remaining cases were caused by *Microsporum lanosum* [*M. canis*] (26) and *M. audouini* (three). All were examined under Wood's light and proved by microscopy and culture.

1126. SCHMIDT (H. W.). **Prophylaxis gegen Ekzematosen und Mykosen mit kolloidalem, labilem Milcheiweiss (Fissanpräparate).** [Prophylaxis against eczematoses and mycoses with colloid, labile milk protein (fissan preparations).]—*Ther. d. Gegenw.*, 93, 3, pp. 108–109, 1954.

This is a further report from Erlangen, Germany, on the treatment of various skin disorders, including trichophytosis caused, e.g., by *Trichophyton tonsurans*, with fissan preparations [2, No. 872].

1127. COSTELLO (M. J.) & GASNER (W. G.). **A non-fluorescent type of persistent ringworm of the scalp.**—*N.Y. St. J. Med.*, 54, 2, p. 269, 1 fig., 1954.

A case of non-fluorescent, persistent tinea capitis caused by *Trichophyton tonsurans* in a four-year-old Puerto Rican girl is reported from the Lenox Hill Hospital, New York, where the incidence of this kind of infection is stated to be on the increase. Unlike the common forms of the complaint, which disappear spontaneously at puberty, the type under observation may persist well into adult life, constituting a permanent reservoir of infection. It should be listed as a notifiable disease and affected children excluded from school attendance.

1128. BATTE (E. G.) & MILLER (W. S.). **Ringworm of Horses and its control.**—*J. Amer. vet. med. Ass.*, 123, 917, pp. 111–114, 3 figs., 1953.

Several cases of girth itch or ringworm of racehorses in New Jersey caused by *Trichophyton equinum*, *T. granulosum*, or *Microsporum equinum* [1, No. 834] were cured by washing both animals and equipment in a solution containing 2 oz. ortho HL 614 (45 per cent. N-trichloromethylthio-tetrahydrophthalimide) plus a cleansing agent in 12 qts. water.

1129. SAUNDERS (W.). **Inflammatory ringworm due to Trichophyton faviforme.**—*Arch. Derm. Syph.*, Chicago, 69, 3, pp. 365–366, 1954.

Trichophyton faviforme [*T. verrucosum*: 2, No. 845] was cultured from one out

of three cases of inflammatory ringworm in a family at Watertown, New York State. Infection was presumably acquired by a son from cattle and transmitted to the other members by direct contact.

1130. BORY (R.), GUYOTJEANNIN (C.), & LUTERAAN (P.-J.). **Sur une localisation particulière d'une épidermo-mycose par 'Aleurisma lugdunense' Vuill., 1924.** [On a special localization of an epidermomycosis caused by *Aleurisma lugdunense* Vuill., 1924.]—*Ann. Derm. Syph., Paris*, 79, 6, pp. 661-664, 2 figs., 1952.

Aleurisma lugdunense was isolated on Sabouraud's agar from eczematous lesions on the palms of the hands of a 52-year-old female in Paris [1, No. 1484].

1131. BAPTISTA (L.), BELLIBONI (N.), & CASTRO (R. M.). **Caso de esporotricose tratado pelo antimoniato de N-metilglucamina.** [Case of sporotrichosis treated with N-methylglucamine antimoniate.]—*Rev. paulist. Med.*, 41, 1, pp. 24-27, 1 fig., 1952. [English summary.]

From the Dermatological Clinic of the Faculty of Medicine, University of São Paulo, Brazil, the authors report the successful treatment of sporotrichosis (*Sporotrichum schencki*) on the left forearm of a 10-year-old coloured boy by intramuscular injections of glucantime (N-methylglucamine antimoniate) totalling 33.75 gm.

1132. RAMOS E SILVA (J.) & GONÇALVES (A. P.). **Sôbre as formas clínicas da esporotricose.** [On the clinical forms of sporotrichosis.]—*Hospital, Rio de J.*, 45, 2, pp. 155-158, 1 fig., 1954.

In 30 cases of sporotrichosis (*Sporotrichum schencki*) investigated at the General Polyclinic, Rio de Janeiro, Brazil, the initial lesions were of four types, namely, ulcero-vegetating in 13 (43 per cent.), verrucose in seven (23), papular in five (16), and ulcerous in five. Of 68 patients with fully developed infection, 40 presented centripetal lymphangitis, 25 the verrucose form, 18 ulcero-vegetating lesions, 10 the papular form, 4 gummous lesions, 4 pure ulcerous lesions, and 2 plaque-like lesions.

1133. YOUNG (C. J.), SHACKELFORD (P. O.), LAMB (J. H.), & KOONS (R. C.). **Sporotrichosis with formation of sporotrichids.**—*Mycopathologia*, 6, 3, pp. 235-236, 1952.

Clinical details are reported from the Duke Laboratories, Stamford, Connecticut, of a case of sporotrichosis (*Sporotrichum schencki*) with formation of sporotrichids in a 16-year-old farm worker, causing a purplish-red ulceration on the lateral aspect of the upper arm. Satisfactory cultures of the causal organism were obtained only after animal inoculation. Oral administration of organidin (the patient having shown extreme sensitivity to potassium iodide) and X-ray treatment of the ulcer cured the condition in five weeks.

1134. SIEVERS (M. L.). **An unusual case of sporotrichosis.**—*New Engl. J. Med.*, 250, 19, pp. 833-835, 4 figs., 1954.

The course and cure, by potassium iodide therapy, of a case of sporotrichosis (*Sporotrichum schencki*) in a 36-year-old male post-office clerk is described from the United States Public Health Service Hospital, Brighton, Massachusetts. The disease appeared to have been contracted when the patient was pricked by a splinter on a wooden carton emanating from a geographical area outside the State.

1135. FELLMAN (H.). **Über einen Fall von Sporotrichose des Gehirns.** [A case of sporotrichosis of the brain.]—*Helv. med. acta*, 20, 4–5, pp. 370–374, 1 graph, 1953.

A case of cerebral sporotrichosis (*Sporotrichum gougeroti*) [1, Nos. 1274, 1547; 2, No. 913] in a 42-year-old factory worker is reported from the Cantonal Hospital, Lucerne, Switzerland. The most conspicuous clinical features of the illness were a psycho-organic syndrome, parkinsonism, and meningitis; the skin was not involved. The diagnosis was established by culture of the fungus from the blackish granulomata found in the brain at autopsy. The possibility of mycotic infection should be considered in cases characterized by a rise in the number of cells without marked neutrophile or lymphocyte reaction, an increase of albumin and reduction of sugar, and a normal chloride content.

1136. SPOOR (H. J.), FRANK (E. F.), & BELL (M.). **Pityrosporum ovale types cultured from normal and seborrhoeic subjects.**—*Arch. Derm. Syph., Chicago*, 69, 3, pp. 323–330, 5 figs., 1954.

From skin scrapings taken at the Metropolitan Hospital, New York, from several hundred adults and children, mostly males, four strains of *Pityrosporum ovale* were isolated, of which one is considered to be a new type on the grounds of morphology and growth characters. The fungus was isolated from over 60 per cent. of 196 normal males from the age of six upwards, with no significant difference in its incidence before and after the age of puberty.

The examination of a small group of seborrhoeic patients revealed approximately the same proportion of *P. ovale*, the causal relationship of which to the disease is regarded as doubtful.

1137. VANBREUSEGHEM (R.). **Mycoses of the Belgian Congo.**—*Trans. Brit. mycol. Soc.*, 38, 1, pp. 10–16, 1955.

The author discusses, with reference to the literature, some unusual and less specialized aspects of the following mycoses occurring in the Belgian Congo [2, No. 444]: miscellaneous dermatophytes [2, No. 139], each region having its own characteristic dermatophytic flora; tinea versicolor (*Malassezia furfur* and possibly other fungi) [2, Nos. 1090, 1091], which is extremely common; African histoplasmosis caused by *Histoplasma duboisii* [2, No. 795]; chromoblastomycosis (*Phialophora pedrosoi*) [2, No. 287]; torulosis (*Cryptococcus neoformans*) [2, No. 754], and rhinosporidiosis (*Rhinosporidium seeberi*) [1, No. 421]. Regarding the last-named the author favours the view that the sporules occurring in the cysts are living organisms rather than reserve substances.

1138. BULLOCK (M.). **A review of medical mycology; some of the more common fungi with reference to their classification and identification.**—*Canad. J. med. Tech.*, 15, 1, pp. 1–13, 1953.

After referring to the difficulties experienced by doctors in identifying fungi associated with human diseases, the author gives brief directions for isolating and culturing these organisms, with short descriptions of the salient cultural characters of the fungi causing the more important human mycoses found in Canada, viz.: the actinomycetes, *Nocardia* spp., *Blastomyces dermatitidis*, *Cryptococcus neoformans*, *Histoplasma capsulatum*, *Candida albicans*, *Trichophyton* spp., *Microsporum* spp., *Epidermophyton floccosum*, *Malassezia furfur*, and *Aspergillus* spp.

1139. KEENEY (E. L.). **Practical medical mycology.**—145 pp., 12 diags., Oxford, Blackwell Scientific Publications, Ltd., 1955. 27s. 6d.

Intended for practising physicians, teachers, and students, this manual comprises information on the historical background, geographical distribution,

source of infection, incidence in relation to age, sex, race, and occupation, symptoms, physical and laboratory findings, roentgenograms, mycology, immunology, allergy, differential diagnosis, prognosis, and treatment of actinomycosis (*Actinomyces israeli*), nocardiosis (*Nocardia* spp., including *N. asteroides*), North American blastomycosis (*Blastomyces dermatitidis*), histoplasmosis (*Histoplasma capsulatum*), sporotrichosis (*Sporotrichum schenckii*), cryptococcosis or torulosis (*Cryptococcus neoformans*), moniliasis (*Candida* spp., chiefly *C. albicans*), geotrichosis (one or more species of *Geotrichum*), chromoblastomycosis (*Phialophora verrucosa*, *P. pedrosoi*, and *P. compacta*), South American blastomycosis (*Paracoccidioides brasiliensis*), aspergillosis (*Aspergillus* spp., mostly *A. fumigatus*), mucormycosis (*Mucor* spp., notably *M. corymbifer*), and dermatophytosis (*Trichophyton*, *Epidermophyton*, *Microsporum*, and *Candida* spp.).

The two closing chapters deal, respectively, with spores of saprophytic fungi as allergens inciting hay fever, asthma, and eczema, and poisonous fungi as agents of mushroom poisoning and ergotism.

1140. HAZEN (ELIZABETH L.) & REED (F. C.). **Laboratory identification of pathogenic fungi simplified.**—xii+108 pp., 22 figs., Oxford, Blackwell Scientific Publications, Ltd., 1955. 40s.

This monograph, the outcome of experience in teaching diagnostic mycological methods to students at the Division of Laboratories and Research, New York State Department of Health, Albany, comprises photo-micrographs, with explanatory annotations, of the pathogens concerned in the etiology of the following diseases of man commonly encountered in North America: *Microsporum*, *Trichophyton*, and *Epidermophyton* spp., *Actinomyces bovis* [*A. israeli*], *Nocardia asteroides*, *Blastomyces dermatitidis*, *Candida albicans*, *Coccidioides immitis*, *Cryptococcus neoformans*, *Geotrichum candidum*, *Histoplasma capsulatum*, *Monosporium apiospermum* [*Allescheria boydii*], *Sporotrichum schenckii*, *Phialophora verrucosa*, *Fonsecaea* [*P.*] *pedrosoi*, *F. compactum* [*P. compacta*], and *Hormodendrum* sp. The manual concludes with 14 formulae for media and a list of general and specific references for further consultation.

1141. EMMONS (C. W.). **The significance of saprophytism in the epidemiology of the mycoses.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 17, 2, pp. 157–166, 1954.

Most of the 25 papers cited by the author in his critical survey of the relation of saprophytism to the epidemiology of the mycoses have already been noticed in this *Review*. A tabulated summary of the results of the examination of 1,751 specimens of soil, dust, litter, and animal and bird excreta shows that *Histoplasma capsulatum* was isolated from 104, *Cryptococcus neoformans* from 20, *Allescheria boydii* from four, and *Sporotrichum schenckii* from two. Pathogenicity was demonstrated by the intra-peritoneal inoculation into mice of the supernatant from a soil suspension. In addition to the foregoing, *Phialophora verrucosa* and *Nocardia asteroides* were each isolated once, the former from decaying wood taken from the siding of an old barn.

1142. VANBREUSEGHEM (R.). **Étiologie des mycoses.** [Etiology of mycoses.]—*Arch. belges Derm.*, 9, 3, pp. 225–236, 1953.

In support of his view that most pathogenic fungi exist saprophytically in the soil before they become pathogenic to men and animals the author instances the case of *Coccidioides immitis* [2, No. 740]. The available evidence appears to prove clearly that the soil plays an essential part in the transmission of this organism. As a second example, the author cites histoplasmosis, caused in America by *Histoplasma capsulatum* [1, No. 2452] and in the Belgian Congo by

H. duboisii [2, No. 795]. The author's own studies, made in collaboration with Van Brussel, demonstrated that soil makes an excellent culture medium for dermatophytes [1, Nos. 2543, 2544, 2545], and the author claims it has now been proved that dermatophytes have a stage in their life-cycle which they pass as saprophytes in the soil.

1143. VANBREUSEGHEM (R.). **Le parasitisme.** [Parasitism.]—*Brux. méd.*, 35, 13, pp. 623–635, 1955.

In this inaugural lecture of a course on tropical parasitology, delivered at the University of Brussels on 4th January, 1955, the author discusses the nature of parasitism and some of the problems associated with it, as exemplified by various diseases, human and other, including histoplasmosis (*Histoplasma capsulatum* and *H. duboisii*) and coccidioidomycosis (*Coccidioides immitis*).

1144. MCCOY (ELIZABETH). **Changes in the host flora induced by chemotherapeutic agents.**—*Ann. Rev. Microbiol.*, 8, pp. 257–272, 1954.

The author reviews the available information (133 references) on changes in the host flora induced by chemotherapeutic agents under the headings of emergence of resistant microflora in the primary host or in the general population; overgrowth by a secondary flora following antibiotic therapy; and antibiotics in animal nutrition.

1145. CANTO BORREGUERO (G.). **Pleomorfismo en el diagnóstico de las micosis viscerales.** [Pleomorphism in the diagnosis of visceral mycoses.]—*Rev. clín. esp.*, 52, 6, pp. 387–393, 14 figs., 1954. [English, German, and French summaries.]

Some characteristic features of the pathological products of patients suffering from visceral mycoses are described from the Institute of Medical Investigations, Madrid, with special reference to their pleomorphism. A modification of the Woodhouse method is used for diagnosis. Some of the differential diagnostic problems still awaiting solution are briefly indicated.

1146. COUDERT (J.) & MURAT (M.). **Intérêt du milieu de Sabouraud à la chloromycétine pour l'isolement des dermatophytes et des champignons levuriformes.** [The value of Sabouraud's medium with chloromycetin for the isolation of dermatophytes and yeast-like fungi.]—*Ann. Biol. clin.*, 12, 3–4, pp. 185–186, 1954. [Abs. in *Excerpta med.*, *Amst.*, Sect. XIII, 9, 1, p. 24, 1955.]

The addition to Sabouraud's agar of chloromycetin [chloramphenicol] at the rate of 330 μ gm. per ml. effectively reduced bacterial contamination in dermatophyte and yeast cultures.

1147. LECHEVALIER (H.). **Les antibiotiques antifongiques produits par les actinomycètes, la candidine.** [Fungicidal antibiotics produced by actinomycetes, candidin.]—*Pr. méd.*, 61, 66, pp. 1327–1328, 2 graphs, 1953.

Summing up the available information on the properties and applications of candidin [2, No. 1072], the author states that it exerts a powerful action against experimental infections induced in mice by *Candida albicans* and *Blastomyces dermatitidis* and a moderate effect on *Histoplasma capsulatum*. Candidin is considered to offer some promise in the control of the secondary fungal infections liable to develop in humans after antibiotic therapy.

1148. KÖNIGSBAUER (H.). **Über die Wirkung der chronischen Colchicinvergiftung auf experimentelle Mykosen.** [On the effect of chronic colchicin poisoning on

experimental mycoses.].—*Experientia*, 11, 4, pp. 146–147, 1955. [English summary.]

At the author's private laboratory for microbiology, Knittelfeld, Austria, rats injected intraperitoneally with colchicin (35 to 50 γ per 100 gm. body weight) daily or on alternate days were inoculated on the tenth day with *Nocardia asteroides*, *N. leishmani* [2, Nos. 671, 679], or *Torula histolytica* [*Cryptococcus neoformans*: cf. 2, No. 759]. The same organisms were inoculated into untreated rats. In the animals that had received colchicin infection was greatly intensified as compared with the controls.

1149. GEORG (LUCILLE K.), AJELLO (L.), & PAPAGEORGE (CALOMIRA). **Use of cycloheximide in the selective isolation of fungi pathogenic to man.**—*J. lab. clin. Med.*, 44, 3, pp. 422–428, 1954.

The results of controlled experiments undertaken at the Communicable Disease Center, Public Health Service, Atlanta, Georgia, showed that concentrations of cycloheximide (actidione), which inhibited the growth of many saprophytic fungi, did not suppress that of those producing subcutaneous or systemic disease in man. All the 15 species tested, with the exception of *Cryptococcus neoformans*, *Allescheria boydii*, and *Aspergillus fumigatus*, were resistant to 0.5 mg. per ml. cycloheximide. *Phialophora pedrosi* and *P. compacta* were stimulated by the antibiotic at high concentrations. The incorporation of cycloheximide (0.5 mg. per ml.), penicillin (20 units per ml.), and streptomycin (40 units) in Sabouraud's dextrose agar after cooling to 45° C. is recommended for use as a selective isolation medium.

1150. TASCHDJIAN (CLAIRE L.). **Fountain pen ink as an aid to mycologic technic.**—*J. invest. Derm.*, 24, 2, pp. 77–80, 2 figs., 1955.

Investigations at the New York Post-Graduate Medical School show that cutaneous material containing dermatophytes, *Candida albicans*, *Nocardia minutissima*, and *Malassezia furfur* may be examined directly in a mixture of 9 parts potassium hydroxide (10 per cent.) and 1 part Parker superchrome blue-black ink [2, No. 847], when the fungal elements appear light blue against a hyaline background. Such specimens may be rendered permanent by neutralizing with acetic acid, dehydrating, and mounting. Material examined directly in undiluted ink may subsequently be cultured.

1151. JANKE (D.). **Kasuistik seltener Mykosen.** [Illustrative cases of rare mycoses.]—*Hautarzt*, 4, 8, pp. 387–390, 8 figs., 1954.

Four unusual cases of dermatomycosis are briefly reported from Germany [cf. 1, No. 2040]: (1) aspergillosis cutanea et subcutanea (*Aspergillus fumigatus*) involving the naso-labial fold in a 46-year-old livestock-dealer; (2) peyronellaeosis pulmonis et cutis (*Peyronellaea* sp.) in a 49-year-old female; (3) aspergillosis capitis (*A. amstelodami*) in a 37-year-old female; and (4) tuberculosis cutis colliquativa in combination with sporotrichosis subcutanea fistulosa (*Sporotrichum beurmanni*) [*S. schencki*] in a 57-year-old merchant long resident in the Balkans. Case (2) terminated fatally after a seven-month illness with a clinical course resembling that of typhus. The species of *Peyronellaea* concerned was designated by Prof. Westerdijk as a new one and is to be described fully in *Mycopathologia*.

1152. VANBREUSEGHEM (R.). **Mycologie africaine.** [African mycology.]—*Ned. Tijdschr. Geneesk.*, 98, 21, pp. 1465–1467, 1954.

The author's brief résumé of recent progress in medical mycology in the Belgian Congo, presented at a joint meeting of the Dutch and Belgian Societies

of Tropical Medicine at Leiden on 13th December, 1952, was followed by a discussion.

1153. VANBREUSEGHEM (R.). **Le Congo belge et la mycologie médicale.** [The Belgian Congo and medical mycology.]-*Mém. Acad. Sci. colon.* (formerly *Mém. Inst. colon. belg. Sci. nat.*), N.S., 1, 1, pp. 3-65, 20 pl., 1955.

Following an introduction to the subject of medical mycology in general, with special reference to the Belgian Congo, the author summarizes and discusses the existing situation in the Colony with respect to various diseases of fungal origin. Many of the contributions listed in the bibliography of 60 titles have already been noticed in this *Review*.

1154. LURIE (H. I.). **Fungal diseases in South Africa.**-*S. Afr. med. J.*, 29, 8, pp. 186-188, 1955.

This list of fungus diseases occurring in South Africa is based entirely on the specimens received at the South African Institute for Medical Research, Johannesburg, during the previous eight years and in no way reflects the incidence of fungus disease over the whole of the Union. The diseases reported are otomycosis (usually caused by *Aspergillus* sp.), sporotrichosis [*Sporotrichum schenckii*], chromoblastomycosis (caused by *Hormodendrum* [*Phialophora*] *pedrosoi* where isolations were made), actinomycosis and nocardiosis (*Actinomyces israeli*, *Nocardia asteroides*, and *N. gypsoides*), rhinosporidiosis [*Rhinosporidium seeberi*], cryptococcosis [*Cryptococcus neoformans*], histoplasmosis [*Histoplasma capsulatum*], and pulmonary aspergillosis. Of the dermatophytes, *Microsporium canis* far outnumbered the other species of the genus. *Epidermophyton floccosum*, *Trichophyton mentagrophytes*, *T. rubrum*, *T. violaceum*, *T. schoenleini*, *T. concentricum*, and *T. discoides* were all encountered, but *T. rubrum* was much more rare than in Great Britain.

1155. MONOD (O.), PESLE (G.-D.), & PRESSE (M.). **Contribution à l'étude de la flore microbienne et mycologique dans les pièces d'exérèse en chirurgie pulmonaire.** [Contribution to the study of the microbial and mycological flora in excised specimens in pulmonary surgery.]-*Pr. méd.*, 62, 77, p. 1591, 1954.

From a study of 62 specimens of material removed in the course of lung operations at the Surgical Centre Marie-Lannelongue, Paris, the authors conclude that fungi are of little importance as agents of pulmonary lesions. *Candida* [*albicans*] was isolated from three patients suffering, respectively, from bronchial dilatation, purulent pleurisy, and cavitary tuberculosis, *Aspergillus niger* from two, and *A. fumigatus* from one, all three patients harbouring neoplasms.

1156. DE JONG (Miss A.). **Twee gevallen van schimmelaandoening van de long.** [Two cases of fungal infection of the lung.]-*Ned. Tijdschr. Geneesk.*, 98, 41, pp. 2928-2929, 1954.

Two cases of fungal infection of the lung were presented at a meeting of the Dutch Association for Thoracic Surgery at Arnhem on 15th November, 1953. The organism obtained from the wall of the lung in the first patient, a 44-year-old male, was *Penicillium bacillosporium*. The sputum of the second, a 17-year-old girl, yielded *Candida albicans*, followed by *Trichosporon pullulans*; from the cavity of an abscess, filled with a grey, clayey mass and a stratified nucleus, which was found after lobectomy and resection, *Cryptococcus albidus* and *C. laurentie* were isolated.

1157. REPETTO Y REY (B.). **Las micosis y en especial las pulmonares. Su investigación por el laboratorio clínico.** [The investigation in the clinical laboratory of

mycoses, particularly pulmonary mycoses.]—*Laboratorio, Granada*, 16, 94, pp. 301–320, 1 fig., 1953.

An account, based on the literature, is given of the clinical characteristics of various mycoses, notably those located in the pulmonary region.

1158. ROLLE (M.) & KOLB (E.). **Zur Frage des Vorkommens von Schimmelpilzen (Mucoraceae, Aspergillaceae) im Magen-Darmkanal der Haustiere.** [On the question of the occurrence of mould fungi (Mucoraceae, Aspergillaceae) in the stomach and intestinal canal of domestic animals.]—*Z. Hyg., Dtsch. InfektKr.*, 139, 5, pp. 415–420, 1 fig., 1954.

The examination at the Institute for Animal Hygiene of Munich University, Germany, of material from the paunch and colon of cattle, sheep, horses, and pigs failed to reveal the presence of thermophilic moulds, e.g., Mucoraceae and Aspergillaceae. Although abundant in hay and in the atmosphere of stables, the spores of the organisms traverse the stomach and intestinal canal without germinating. The growth of *Absidia ramosa* [*Mucor ramosus*] on Gassner plates was inhibited by contact with large numbers of [*Escherichia*] *coli*, to which the hyphae reacted by negative tropism.

1159. JONES (T. C.). **Einige Pilzkrankungen bei Tieren in U.S.A.** [Some fungous diseases of animals in the United States.]—*Dtsch. tierärztl. Wschr.*, 60, 45, pp. 512–514, 6 figs., 1953.

This is a summary of the information on the following mycoses affecting animals in the United States which are rare or unknown in Europe: histoplasmosis (*Histoplasma capsulatum*) of dogs and rodents; epizootic lymphangitis (*Cryptococcus farciminosus*) [*H. farciminosum*], sporotrichosis (*Sporotrichum schenckii*), and rhinosporidiosis (*Rhinosporidium seeberi*) of the horse; coccidioidomycosis (*Coccidioides immitis*) of cattle and other animals; blastomycosis (*Blastomyces dermatitidis*) of the dog; and cryptococcosis (*Cryptococcus neoformans*), recently reported as the agent of two severe outbreaks of bovine mastitis.

1160. BOCOBO (F. C.), CURTIS (A. C.), BLOCK (W. D.), & HARRELL (E. R.). **In vitro study of antifungal activity of nitrostyrenes.**—*Proc. Soc. exp. Biol., N.Y.*, 85, 2, pp. 220–222, 1954.

The *in vitro* activity of 53 compounds with chemical formulae related to the stilbene nucleus was tested at the University of Michigan Medical School. A group of five nitrostyrenes (β -nitrostyrene, p-methoxy- β -nitrostyrene, p-acetoxy- β -nitrostyrene, β -methyl- β -nitrostyrene, and p-methoxy- β -methyl- β -nitrostyrene) were the most effective. The lowest concentrations of these compounds effective against 23 species of fungi (including *Trichophyton* and *Microsporum* spp., *Epidermophyton floccosum*, *Hormodendrum* [*Phialophora*] *pedrosoi*, and *Cryptococcus neoformans*) are given.

1161. HOWELL (A.) & FITZGERALD (R. J.). **The production of acid phosphates by certain species of Actinomyces.**—*J. Bact.*, 66, 4, pp. 437–442, 5 graphs, 1953.

In experiments at the National Institute of Dental Research, Bethesda, Maryland, ten strains of *Actinomyces israeli* or related organisms and two strains of *A. naeslundii* [1, No. 2058], grown on p-nitrophenyl phosphate, were repeatedly shown to produce acid phosphatase, but in both groups the optimum hydrogen-ion concentration for phosphatase activity varied with the temperature. There appear to be significant differences between the acid phosphatases produced by *A. israeli* and *A. naeslundii*.

1162. SCHNEIDER (G.). **Über verschiedene Riesenzellformen beim Ablauf der Actinomykose.** [On various forms of giant cells in the course of actinomycosis.]—*Dtsch. Zahn-, Mund- u. Kieferheilk.*, 20, 9–10, pp. 425–434, 9 figs., 1954.

This is an exhaustive discussion from the dental clinic of the Karl-Marx-University, Leipzig, Germany, of the development in certain phases of actinomycosis (*Actinomyces [israeli]*) of giant cells of the Langhans type, closely simulating those associated with tuberculosis, which are interpreted as a histio-reticular reaction to toxic stimuli of the pathogen.

1163. MARIAT (F.) & LAVALLE (P.). **Sur l'utilisation de divers composés carbonés et azotés par *Nocardia asteroides* et *N. brasiliensis*.** [On the utilization of various carbon and nitrogen compounds by *Nocardia asteroides* and *N. brasiliensis*.]—*C.R. Acad. Sci., Paris*, 240, 2, pp. 255–257, 1955.

A table is given showing the utilization of 15 carbon and eight nitrogen compounds by 11 strains of *Nocardia asteroides* and 10 of *N. brasiliensis*. The enzymatic activity of the latter species was greater than that of the former. Glucose and laevulose were assimilated by all the strains of both species, except one slightly atypical isolate of *N. asteroides* which did not utilize laevulose. Most of the strains of *N. brasiliensis* made good growth in the presence of galactose, which was not utilized by *N. asteroides*. Besides the above-mentioned atypical strain of *N. asteroides*, one other of the same species and two of *N. brasiliensis* presented both physiological and morphological anomalies.

1164. McCLUNG (N. M.). **The utilization of carbon compounds by *Nocardia* species.**—*J. Bact.*, 68, 2, pp. 231–236, 1954.

The utilization of 39 carbon compounds in chemically defined media by various organisms, including 43 isolates of species of *Nocardia*, two strains of species of *Streptomyces*, and *Jensenia canicruria*, was studied at the University of Kansas, Lawrence. All the organisms tested used glucose, mannose, dextrin, and inulin, but none utilized *m*-creol or exactly the same series of carbon compounds, indicating that carbon compound assimilation would be of value in identifying and differentiating species of *Nocardia*.

1165. HICKEY (R. C.) & BERGLUND (E. M.). **Nocardiosis. Aerobic actinomycosis with emphasis on the alimentary tract as a portal of entry.**—*Arch. Surg., U.S.A.*, 67, 3, pp. 381–391, 2 figs., 1953.

From the Veterans Administration Hospital, Iowa City, five cases of nocardiosis involving the abdomen (two cases) and the cervical, pilonidal, and ischio-rectal regions in adult white males are reported. Confirmatory cultures of *Nocardia asteroides* were obtained from all cases. Nocardiosis is regarded as an infrequent but poorly recognized disease. The organisms show variable pathogenicity and gain entry through an epithelial disruption either through the skin, by inhalation, or by ingestion. The isolates were inhibited by broth concentrations of sulphadiazine at levels less than blood concentrations, and both penicillin and oxytetracycline inhibited growth well. Treatment by surgery and the use of sulphadiazine, antibiotics (penicillin or oxytetracycline), and potassium iodide was effective in curing the disease.

1166. DEPIEDS (R.). **Influence du pH sur le développement et la pigmentation d'*Actinomyces asteroides*.** [Influence of pH on the development and pigmentation of *Actinomyces asteroides*.]—*C.R. Soc. Biol., Paris*, 149, 3–4, pp. 376–377, 1955.

The results of experiments at the Faculty of Medicine, Marseilles, demon-

strated a close relationship between the mycelial development and pigmentation of *Actinomyces* [*Nocardia*] *asteroides* on the one hand and progressive changes in the acidity of the cultures on Sabouraud's agar on the other. Thus, in tubes adjusted to 2, 2.5, and 4, in which growth was impossible, there was no change in the pH after six months, whereas the 4.5 and 5 concentrations, permitting scanty growth, had reached 7. The colour of the colonies on the unmodified medium is a bright orange-yellow, at pH 7.5 to 12 slightly darker, and at 4.5 and 5 paler.

1167. FÖLDVÁRI (F.), & FLORIAN (E.). **Actinomycose primaire de la peau (causée par l'*Actinomyces griseus globisporus*).** [Primary cutaneous actinomycosis (caused by *Actinomyces griseus globisporus*).]—*Dermatologica*, Basel, 109, 4, pp. 222–224, 4 figs., 1954. [German and English summaries.]

This report from the Dermatological Clinic of the University of Budapest, Hungary, of a case of actinomycosis in a 53-year-old gardener is considered to be of interest for two reasons, one being the unusual site of infection in the right moustache region and the other the identity of the causal organism, *Actinomyces griseus* [var.] *globisporus*, which does not appear to have been previously recorded as a pathogen in the relevant literature.

1168. DUPERRAT (B.) & GOUDOT (B.). **Actinomycose humérale rebelle à tous les traitements. Amélioration considérable après acupuncture et isoniazide.** [Humeral actinomycosis refractory to all treatments. Considerable relief from acupuncture and isoniazid.]—*Bull. Soc. franç. Derm. Syph.*, 61, 4, pp. 347–348, 1954.

Two years after acupuncture for the relief of an intensely painful actinomycotic infection [*Actinomyces israeli*] of the left humerus in a 25-year-old female, a pea-sized fistula still persisted. Massive doses (900 mg. daily) of isoniazid resulted in cicatrization after about ten weeks, but the scar remained tender to the touch.

1169. STEVENS (H.). **Actinomycosis of the nervous system.**—*Neurology*, 3, 10, pp. 761–772, 9 figs., 1953.

From the Georgetown University School of Medicine, Washington, D.C., four cases of actinomycosis of the central nervous system are described [1, No. 2062], three of them fatal, with reports of two autopsies. One showed typical multiple abscesses and the rare manifestation of mycetoma due to *Nocardia asteroides*. One patient was cured by combined chemotherapy with penicillin and sulphadiazine and surgery and is still well after an eight-year follow-up period.

1170. ZITKA (E.). **Über aktinomykotische Osteomyelitis im Kindesalter.** [On actinomycotic osteomyelitis in childhood.]—*ÖstZ. Stomatol.*, 50, 7, pp. 337–342, 3 figs., 1953.

Actinomycotic osteomyelitis of the jaw (*Actinomyces* Wolff-Israel) [*A. israeli*: see next entry] is stated to be a very rare condition, having been observed in only five out of 187 patients at the Surgical Clinic of the University of Vienna—all children between 5½ and 16 years old.

1171. HERTZ (J.). **Actinomycosis of the mandible. Report of an atypical case.**—*Acta path. microbiol. scand.*, 36, 3, pp. 205–209, 1 fig., 1955.

The examination at the State Serum Institute, Copenhagen, Denmark, of pus from a swelling on the mandible of a 27-year-old female revealed an organism of the *Actinomyces* group and anaerobic Gram-negative rods and

streptococci. *A. israeli*, however, was absent, so that the condition must be classified as an atypical actinomycosis. Infection probably originated in the alveolus from which a wisdom tooth had been removed eight months earlier. An apparently complete cure was effected by surgery and 14 injections of 1,000,000 international units of procaine penicillin.

1172. EIKEN (M.). **Bacteriological examination of pus from human actinomycosis. An evaluation of the agar shake culture method.**—*Acta path. microbiol. scand.*, 36, 3, pp. 228–236, 1955.

At the State Serum Institute, Copenhagen, Denmark, 12 specimens of pus from patients with cervico-facial actinomycosis were cultured on the surface of blood and brain-heart agar plates under anaerobic conditions, and in agar shake tubes. Primary growth of *Actinomyces [israeli]* developed from all the specimens on the plates compared with only three in the tubes. In all the specimens the actinomycetes were accompanied by bacteria, including *Bacterium actinomycetem comitans* [2, No. 10] and the so-called 'corroding bacillus', which grew freely on the plates but were only sparsely represented in the tubes. On the basis of these results the agar shake method is considered to be unsuitable for the demonstration of actinomycetes and their concomitants in human pus.

1173. DENIS (J. P.), TROPÉ (J.), & CERNÈS (M.). **Un cas d'actinomycose de l'omoplate.** [A case of actinomycosis of the scapula.]—*J. Radiol. Électrol.*, 35, 5–6, pp. 448–450, 3 figs., 1954.

The radiological findings in a case of actinomycosis [*Actinomyces israeli*] of the scapula in a 54-year-old Parisian housewife are reported in detail. The condition was greatly ameliorated by antibiotic therapy, using aspergillin, streptomycin, penicillin, and aureomycin, followed by X-ray treatment.

1174. BARKER (C. S.). **Thoracic actinomycosis.**—*Canad. med. Ass. J.*, 71, pp. 332–334, 4 figs., 1954.

Nine cases (seven men and two women) of thoracic actinomycosis are described from the Royal Victoria Hospital, Montreal. Diagnosis was established by the demonstration of sulphur granules or the growth in culture of '*Actinomyces*', stated in two cases to be 'of the Wolff-Israel type'. Diagnosis tends to be delayed by the variable reaction of the host or the presence of other organisms. This serious disease is amenable to treatment in the early stage.

1175. NOLAN (J. O.). **Actinomycosis. A case report.**—*Conn. St. med. J.*, 18, 11, pp. 901–902, 1954.

A case of cervico-thoracic actinomycosis (*Actinomyces [israeli]*) in a five-year-old girl is reported from the St. Francis Hospital, Hartford, Connecticut. An apparently complete cure was effected by a combination of aureomycin and biosulpha therapy with adequate surgical drainage, the latter being regarded as the decisive factor in the success of the regimen.

1176. ZITKA (E.). **Über einen geheilten Fall von Aktinomykose des Nackens.** [On a cured case of cervical actinomycosis.]—*ÖstZ. Stomatol.*, 50, 10, pp. 539–542, 1 fig., 1953.

A case of cervical actinomycosis (*Actinomyces* Wolff-Israel) [*A. israeli*: see preceding entry] in a nine-year-old girl is reported from the Surgical Clinic of the University of Vienna. X-ray irradiation, potassium iodide, penicillin,

and vaccine therapy resulted only in a temporary improvement, but an apparently complete cure was effected by three blood transfusions followed by the administration of penicillin and streptomycin for 12 and 10 days, respectively. The root tips of three extracted carious teeth yielded the organism in pure culture, suggesting that the infection was of dental origin.

1177. KERBRAT & CELLERIER. **Actinomycose bronchopulmonaire à forme tumorale.** [Bronchopulmonary actinomycosis in tumorous form.]—*J. franç. Méd. Chir. thor.*, 8, 5, pp. 555-561, 1954.

A full account is given of a case of bronchopulmonary actinomycosis (*Actinomyces bovis*) [*A. israeli*] in a seven-year-old boy at Brest, France, which was exceptional by reason of the formation of inflammatory pseudo-tumours. A cure was effected by the administration of T.H.F. or téhyphon (1-2-3-4-tetrahydrofluorenone).

1178. KRAUS (R.). **Zur Problematik, Diagnose und Differentialdiagnose der primären Lungenaktinomykose.** [On the uncertainties, diagnosis, and differential diagnosis of primary pulmonary actinomycosis.]—*Beitr. klin. Chir.*, 188, 1, pp. 72-79, 3 figs., 1954. [English and French summaries.]

From the Surgical University Clinic, Frankfurt-am-Main, Germany, the author reports and discusses the X-ray findings in a case of pulmonary actinomycosis with abscess formation and pericardiac effusion in a 53-year-old male. The diagnosis was first established at autopsy. Caseous tuberculosis was also present, although sputum examinations had been consistently negative, suggesting that the possibility of actinomycosis should be considered in differential diagnosis.

1179. HUNTER (R. A.), WILLCOX (D. R.), & WOOLF (A. L.). **Aerobic actinomycosis with a report of a case resembling miliary tuberculosis.**—*Guy's Hosp. Rep., Lond.*, 103, 2, pp. 196-206, 4 figs., 1954.

The clinical history and autopsy findings in a 50-year-old female patient suffering from aerobic actinomycosis (*Actinomyces* [*Nocardia*] *asteroides*) are reported from the Maudsley Hospital and Institute of Psychiatry and discussed in the light of 73 cases of the disease recorded in the literature. The pathological process closely simulated that of acute miliary pulmonary tuberculosis.

1180. SCARINCI (C.). **Actinomicosi polmonare primitiva ; identificazione del parassita mediante la bronco-aspirazione ; guarigione con l'associazione penicillina-solfamidici a forti dosi.** [Primary pulmonary actinomycosis; identification of the parasite by means of broncho-aspiration; cure by heavy doses of compound penicillin-sulphonamide.]—*Polislinico*, 60, 23, pp. 814-817, 2 figs., 1953. [French and English summaries.]

After reviewing the available information on the diagnosis of primary pulmonary actinomycosis (*Actinomyces* spp.) the author gives clinical details of a case of the disease in a male patient, a miller, aged 51, at the Sanatorial Hospital of the N.P.S. 'G. Falloppio', Padua, Italy. Bronchoscopic examination showed the presence of a Gram-positive, filamentous organism of a kind likely to be associated with actinomycosis. Treatment with penicillin-sulphonamide was undertaken and after four months the patient was able to resume normal activity. It was not possible to identify the causal organism, as the bronchial secretions, obtained by means of the bronchoscope, were diluted with 10 per cent. formalin and no cultures could be made.

1181. MURPHY (L. C.). **A case of actinomycosis of ovary.**—*J. Kans. med. Soc.*, 55, 5, pp. 254–256, 2 figs., 1954.

A rare case of actinomycosis (*Actinomyces bovis*) [*A. israeli*] involving only the left ovary, with bilateral pyosalpinx and mild active inflammation of the opposite ovary, is reported from Wichita, Kansas. A draining sinus persisted after two operations.

1182. SMITH (FLORA). **Actinomycosis. A report of two unusual cases.**—*N.Z. med. J.*, 52, 289, pp. 171–173, 2 pl., 1953. [Received 1955.]

Two unusual cases of actinomycosis caused by *Actinomyces bovis* [*A. israeli*] are reported from New Zealand. The first involved the right testis [2, No. 465] in a 76-year-old European and was characterized by a large, right-sided scrotal hernia with an epididymitis. The epididymis was adherent to the scrotal wall and the sinuses were discharging in the scrotum. The fungus was present in small abscesses in the testis and epididymis. Following a right-sided orchidectomy at the Hutt Hospital in April, 1952, the wound healed soundly and two months afterwards there was no further discharge.

The second patient, a 49-year-old European bank officer, harboured an extensive actinomycotic granuloma involving a large area of the quadriceps muscle, characterized by swelling, soreness, and stiffness in the right thigh [1, No. 2074] over a period of about eight years. Fibrosis was marked but the organisms were scanty. After removal of a mass of muscle from the patella to the upper third of the thigh at Wellington Hospital in December, 1952, the wound healed well with no evidence of residual infection.

1183. RAŠOVIĆ (L.) & VASILJEVIĆ (D.). **Slučaj uspešno lijece aktinomikoze abdomena.** [A case of successfully treated abdominal actinomycosis.]—*Srpski Arkh. tselok. Lek.*, 80, 5–6, pp. 504–509, 1952.

A 49-year-old male patient suffering from abdominal actinomycosis [*Actinomyces israeli*] was successfully treated at the Faculty of Medicine, Belgrade, Yugoslavia, with penicillin, streptomycin, radiotherapy, and potassium iodide. Nine months later he was still in good health.

1184. HOFFMAN (H. S.). **Actinomycotic diverticuloma of the sigmoid colon.**—*J. Amer. med. Ass.*, 156, 3, pp. 244–246, 2 figs., 1954.

A 48-year-old white woman was admitted to the Hahnemann Hospital, Philadelphia, with a three-year history of intermittent colicky pain in the right lower abdomen, which had become much worse in the previous two months. Five years previously, diverticulosis of the colon had been diagnosed. There were no abnormal physical signs, but a barium enema showed numerous diverticula of the descending colon and narrowing of the sigmoid, which appeared to be caused by a mass.

Laparotomy was performed, and the diseased portion of the sigmoid was excised, the ends of the bowel being rejoined by end-to-end anastomosis. The excised bowel wall was thickened and contained several diverticula. Microscopical preparations of one of these, after treatment with Mallory's stain, showed the presence of homogeneous, dark blue, circular bodies 7 to 8 μ in diameter, and a diagnosis of actinomycotic diverticuloma was made. The patient made an uneventful recovery.

1185. ANSCOMBE (A. R.) & HOFMEYER (J.). **Perianal actinomycosis complicating pilonidal sinus.**—*Brit. J. Surg.*, 41, 170, p. 666, 1 fig., 1954.

A case of pilonidal sinus, secondarily infected with perianal actinomycosis, in a 56-year-old male with a 15-year history of recurrent discharge from the sacral region is reported from the Poplar Hospital, London. This is believed

to be the first record in Great Britain of actinomycotic infection of a pilonidal sinus and only the second in the English literature on the subject (cf. *Rocky Mtn med. J.*, 44, p. 820, 1947). In the present case the coccyx was also involved. The organism isolated from the pus is described as 'a Gram-positive, true-branching, beaded streptothrix, without any clubbed forms'.

1186. BUSHMANOVA (Mme L. G.). К лечению актиномикоза пенициллином. [Treating actinomycosis with penicillin.]—Хирургия, Москва [*Surgery, Moscow*], 3, p. 74, 1952.

Treatment of a 43-year-old male patient suffering from actinomycosis [*Actinomyces israeli*] of the front chest wall at the Surgical Molotov Medical Institute, Tomsk, U.S.S.R., with intramuscular penicillin injections every three hours for 21 days resulted in complete recovery after two months.

1187. SELIGMAN (S. A.). **Treatment of actinomycosis with aureomycin.**—*Brit. med. J.*, 1954, p. 1421, 1954.

A 31-year-old farmer was admitted to Swansea Hospital with a lump in his neck which had been present for five weeks. It was firm, fluctuant, and the skin over it was indurated and reddened. No sinuses were present. *Actinomyces israeli* was grown from fluid aspirated from it. A total of 45 gm. of aureomycin [2, No. 945] was given in 33 days. The lump became invisible within one week of the commencement of treatment. A month after the cessation of treatment, however, the lump reappeared and *A. israeli* was again cultured from it. A further 84 g. of aureomycin was given in 28 days, and again the mass disappeared, though a small fibrous nodule could be felt. Four months later there was no recurrence. A brief review of the literature on the treatment of actinomycosis with aureomycin is given.

1188. DE GRACIANSKY (P.) & GRUPPER (C.). **Un cas d'actinomycose guérie par le rimifon.** [A case of actinomycosis cured by rimifon.]—*Bull. Soc. franç. Derm. Syph.*, 60, 5, pp. 454-457, 1953.

Full clinical details are given of a case of cervico-facial and thoracic actinomycosis (*Actinomyces israeli*) in a 32-year-old female, who was cured by a six-weeks course of rimifon (isoniazid) [2, No. 470] at a daily dosage of 300 mg.

1189. KIMBALL (ALICE), TWIEHAUS (M. J.), & FRANK (E. R.). **Actinomyces bovis isolated from six cases of bovine orchitis. A preliminary report.**—*Amer. J. vet. Res.*, 15, 57, pp. 551-553, 3 figs., 1954.

Observations are presented on the cultural, morphological, and biochemical characters of the smooth type of *Actinomyces bovis*, which was isolated from six cases of bovine orchitis in Kansas. This is believed to be the first report of the association of the organism with the disease in question.

1190. KERBRAT (G.). **Les mycoses bronchopulmonaires.** [The broncho-pulmonary mycoses.]—*Rev. prat., Par.*, 3, 4, pp. 205-207, 1953.

The author reviews the diagnostic features of pulmonary actinomycosis [*Actinomyces* spp.], bronchopulmonary aspergillosis [*Aspergillus* spp.], blastomycoses, moniliasis [*Candida* spp.], coccidioidomycosis [*Coccidioides immitis*], and histoplasmosis [*Histoplasma capsulatum*]. He concludes that mycoses are no longer to be considered as merely rare forms of respiratory disease. They can resemble any aspect of broncho-pulmonary tuberculosis in any of its stages. No certain diagnosis of tuberculosis can be made in the absence of bacteriological confirmation. Complementary examination should include a search for pathogenic fungi, involving culture on appropriate media and inoculations. By these methods alone can the presence or absence of mycotic infection be diagnosed with certainty.

1191. BROOKSBANK (N. H.) & AUSTWICK (P. K. C.). **Susceptibility of inbred and outbred Chicks to aspergillosis.**—*Brit. vet. J.*, **III**, 2, pp. 65–67, 1955.

In the spring and early summer of 1954 a severe outbreak of aspergillosis (*Aspergillus fumigatus*) occurred among chicks [2, No. 696] in a Lancashire hatchery. The heavy losses registered in alternate weeks appeared to be related to the different susceptibilities of pure and hybrid strains resulting from the practice of alternate in- and cross-breeding. Variations in the reaction to infection were also observed between several pure-bred lines. For instance, among the White Leghorn strains B, C, and E and Rhode Island Red G and H there were no deaths from the disease, whereas strains A of White Leghorn and F of Rhode Island Red were highly susceptible, with mortalities of 82 and 69 per cent., respectively, in the first hatch and of 71 and 79 in the third.

1192. CARLL (W. T.) & FORGACS (J.). **The significance of fungi in hyperkeratosis.**—*Milit. Surg.*, **115**, 3, pp. 187–193, 5 figs., 1954.

At Camp Detrick, Frederick, Maryland, bread and maize on which *Aspergillus chevalieri* and *A. clavatus*, isolated from a food concentrate and toxic feed pellets, respectively, had been grown, induced acute and chronic symptoms in force-fed calves. Many of the effects of sublethal feeding with the latter species resembled those observed in field cases of hyperkeratosis or X-disease. A toxic anti-bacterial substance isolated from various substrates used for the culture of *A. clavatus*, and from the toxic feed pellets, was also pathogenic to mice. The acute symptoms and histopathological findings in the latter were similar to those in calves killed by the maize on which *A. clavatus* was cultured.

1193. CARLL (W. T.), FORGACS (J.), & HERRING (A. S.). **Toxicity of fungus isolated from a food concentrate.**—*Amer. J. Hyg.*, **60**, 1, pp. 8–14, 2 figs., 1954.

In studies conducted at the Chemical Corps Biological Laboratories, Camp Detrick, Frederick, Maryland, *Aspergillus chevalieri*, *A. tamarivii*, and a fungus belonging to the *A. flavus-oryzae* group were isolated from a cattle-feed concentrate producing hyperkeratosis. The presence of chlorinated compounds sometimes responsible for the disease had not been demonstrated in the concentrate. Ether extracts of bread on which *A. chevalieri* had been cultured, applied topically on a calf, produced an acute inflammatory dermal reaction characterized by hyperaemia, oedema, and later, by coarse wrinkling and bold folding of the skin in parallel alignment along the short axis of the neck, systemic depression, apathy, increased pulse, respiration, lachrymation, and cachexia. Bread on which *A. chevalieri* had been cultured, administered in an aqueous slurry by stomach-tube, caused the death of two calves. A calf given sublethal doses of the toxic bread showed a drop in vitamin A blood-level from 20 to 12 mg. per 100 ml. of blood after the third day of feeding. A correlation was established between the dermal toxicity of ether extracts and the oral toxicity of bread on which the three fungi had been cultured.

1194. FORGACS (J.), CARLL (W. T.), HERRING (A. S.), & MAHLANDT (B. G.). **A toxic *Aspergillus clavatus* isolated from feed pellets.**—*Amer. J. Hyg.*, **60**, 1, pp. 15–26, 3 figs., 1954.

In work at the Chemical Corps Biological Laboratories, Camp Detrick, Frederick, Maryland, a toxic strain of *Aspergillus clavatus* was isolated from a hyperkeratosis-producing pelleted feed not containing highly chlorinated naphthylenes, but which had caused chronic toxic symptoms in calves in Wisconsin. A direct relationship was established between the dermal toxicity of ether extracts and the oral toxicity of maize on which the fungus had been

grown. In culture the *A. clavatus* produced an anti-bacterial substance and a dermal inflammatory factor. Whole-grain maize on which the fungus had been cultured, forcibly fed to calves, produced acute and chronic symptoms culminating in death. The acute symptoms consisted of lachrymation, salivation, depression, Cheyne-Stokes respiration, anorexia, foetid diarrhoea, congestion and haemorrhage in the liver, kidneys, adrenals, abomasum, small intestine, caecum, lungs, heart, mucosa of the trachea, atelectasis, and dilation of the collecting tubules. The anti-bacterial substance isolated from culture substrates and from the feed caused acute toxic symptoms and, later, death in mice. The acute toxic symptoms and histopathological features found in mice occurred also in calves that died acutely after feeding with toxic maize on which the *A. clavatus* had been cultured. It is considered that sufficient evidence has been obtained to warrant further studies in the part played by fungi in hyperkeratosis.

1195. EGER (W.) & KUERT (P.). **Über akute Pilzencephalitis (Aspergillose) beim Menschen und im Tierexperiment.** [On acute fungal encephalitis (aspergillosis) in Man and in animal experiments.]—*Dtsch. Z. Nervenheilk.*, 171, 5, pp. 370–387, 8 figs., 1954.

A rapidly fatal case of acute cerebral aspergillosis (*Aspergillus fumigatus*) in a 38-year-old male is fully reported from the Pathological Institute of the University of Göttingen, Germany. Injected intraperitoneally into rats, the fungus induced encephalitis of the same type as in the patient.

1196. JORDAN (F. T. W.). **The incidence of fungi in the lungs of Poultry.**—*Brit. vet. J.*, 110, 1, pp. 25–26, 1954.

In studies at the Veterinary Investigation Centre, Aberystwyth, on the fungi present in macroscopically normal lungs of poultry, out of 25 fowls, ten days to five years old, presented for routine post-mortem examination only one death was attributed to mycological infection. In this fowl the abdominal air-sacs were infected by *Aspergillus fumigatus* but the lungs appeared to be normal, though the fungus was isolated from them. *Penicillium* spp. were found in 18 birds and *A. fumigatus* in seven. Three yielded no fungus. The remaining 22 gave a total of 37 cultures of nine different species, with up to four species from a single pair of lungs. There appeared to be no relationship between the age of a bird and the species and number of fungi isolated from it.

1197. SCHAFER (H.). **Unerwünschte Folgeerscheinungen der antibiotischen Therapie.** [Undesirable after-effects of antibiotic therapy.]—*M Schr. Kinderh.*, 102, 3, pp. 192–196, 4 figs., 1954.

From the Children's Clinic of the Free University, Berlin, the author reports two cases, one of rhinopharyngitis and the other of interstitial pneumonia (both in infants), in which penicillin therapy is believed to have contributed to the fatal outcome by enhancing the virulence of fungi in the oral cavity—a species of *Aspergillus* in the former case and *Candida albicans* in the latter. Similar instances from the literature are also discussed.

1198. TOBLER (W.) & MINDER (W.). **Generalisierte chronische Aspergillose beim Kind und ihre Beziehung zur antibiotischen Therapie.** [Generalized chronic aspergillosis in the Child and its relation to antibiotic therapy.]—*Helv. paediat. Acta*, 9, 3, pp. 209–230, 12 figs., 1954. [French, Italian, and English summaries.]

Generalized aspergillosis is stated to be very rare. A fatal case of the disease caused by an undetermined species of *Aspergillus*, involving the lungs,

bronchial nodes, bones, and cerebellum, is reported from the Children's Hospital, Bern, Switzerland. The boy died at the age of six following excision of a granuloma of the cerebellum, but infection was probably contracted during the first two years of life. Severe recurrent secondary infections necessitated the repeated use of antibiotics, the possible relationship of which to the illness, and the concomitant haemolytic anaemia and ceroid storage, is discussed.

1199. MANWELL (R. D.). **A case of aspergillosis in a Song Sparrow.**—*J. Parasit.*, 40, 2, p. 231, 1954.

It is reported from Syracuse University, Syracuse, New York, that a wild song sparrow, captured at Fayetteville, New York, and kept in a cage until its death ten days later, was found at autopsy to have one lung completely destroyed by a dense growth of *Aspergillus fumigatus*. The infection is believed to have been contracted in the wild state. The author emphasizes that in his experience of many years, during which large numbers of birds belonging to some 50 species have been autopsied, no other case of aspergillosis has been found.

1200. BOCOBO (F. C.) & CURTIS (A. C.). **Studies on fungi encountered in the atmosphere. 1. The presence of fungus spores and of pollens in KOH preparations.**—*J. invest. Derm.*, 23, 6, pp. 479–488, 6 figs., 1954.

Caustic potash mounts of skin scrapings, taken in the course of diagnostic work in the Outpatient Clinic of the University of Michigan Hospital, sometimes showed the presence of fungus spores, particularly species of *Alternaria* and occasionally of *Helminthosporium*, and also of pollen grains. The incidence curve for the occurrence of *Alternaria* spores in the atmosphere of the locality, month by month, was approximately paralleled by that for the same spores found in skin scrapings.

1201. BOCOBO (F. C.), CURTIS (A. C.), BLOCK (W. D.), & STUBBART (F. J.). **Studies on fungi encountered in the atmosphere. II. Production of dermatitis in Guinea-Pigs by crude ether-soluble extracts of Alternaria, Hormodendrum, Penicillium and Aspergillus.**—*J. invest. Derm.*, 23, 6, pp. 489–496, 2 figs., 1954.

In continuation of their work on the occurrence of saprophytic fungi in skin scrapings [see preceding entry] the authors describe some preliminary experiments with guinea-pigs, designed to find out whether ether extracts of certain atmospheric fungi can induce cutaneous changes when placed in direct contact with the skin. Of the extracts of four fungi which were painted directly on to epilated areas of skin, those of *Alternaria* sp., *Penicillium* sp., and *Aspergillus niger* produced an eczematoid dermatitis, while that of *Hormodendrum* sp. had no effect. Skin tests made with all the extracts, both during the period of painting and after the healing of the lesions, gave a positive reaction only with the extract of *Alternaria*. This suggested the presence of primary irritants in the *Penicillium* and *Aspergillus* extracts and a possible contact allergen in the *Alternaria* extract.

1202. ZAPATER (R. C.). **Los hongos atmosféricos como alérgenos.** [Atmospheric fungi as allergogens.]—*Prensa méd. argent.*, 40, 38, pp. 2528–2531, 11 figs., 1953.

Fungi trapped in Petri dish cultures exposed to the air at the Military Hospital, Buenos Aires, Argentina, included *Chaetomium globosum*, *Penicillium chrysogenum*, *P. notatum*, *Aspergillus fumigatus*, *Cladosporium*, *Helminthosporium*, and *Alternaria* spp., *Absidia blakesleeana*, *Mucor spinosus*, and *Rhizopus nigricans* [*R. stolonifer*].

1203. ACREE (P. W.), DECAMP (P. T.), & OCHSNER (A.). **Pulmonary blastomycosis; a critical analysis of medical and surgical therapies, with a report of six cases.**—*J. thorac. Surg.*, 28, 2, pp. 175–193, 5 figs., 1954.

From a detailed review of 20 cases reported in the literature of the use of stilbamidine and 2-hydroxystilbamidine in cases of pulmonary blastomycoses (*Blastomyces dermatitidis*), and a careful study of six cases of their own, the authors, working at Tulane University School of Medicine, New Orleans, Louisiana, come to the following conclusions. On a basis of three years' experience 2-hydroxystilbamidine appears to be an effective, non-toxic therapeutic agent, though in some cases lung resection is required after control of the active disease by diamidine therapy. Pulmonary resection or biopsy in unsuspected cases of blastomycosis is hazardous and should be promptly followed by vigorous diamidine therapy. Relatively short-term observations indicate that the prognosis for pulmonary blastomycosis is excellent when the diagnosis is made in time and before pulmonary resection is resorted to, but it is emphasized that the causal organism is difficult to recognize in, and to culture from, exudates and tissues.

1204. ELLIOT (G. B.), WILT (J. C.), & DUGGAN (M.). **Cutaneous and systemic North American blastomycosis.**—*Canad. med. Ass. J.*, 67, 6, pp. 650–653, 1952.

Two cases of blastomycosis [*Blastomyces dermatitidis*] are reported from the Winnipeg and Brandon General Hospitals, Manitoba, one of the cutaneous form in a 75-year-old farmer, and the other systemic in a 68-year-old engineer.

1205. GAUMOND (É.). **Onze cas de blastomycose nord-américaine dans la région de Québec.** [Eleven cases of North American blastomycosis in Quebec.]—*Laval méd.*, 18, 10, pp. 1319–1344, 12 figs., 1953.

During a 15-year period 23 cases of cutaneous blastomycosis (*Blastomyces dermatitidis*) occurred in the Quebec region of Canada [cf. 1, Nos. 1342, 1356, 2093; 2, No. 488], of which 11 seen by the author are described. Nine of the patients lived in the country but only five were farmers. There was only one woman in the series. All presented the typical histopathological symptoms of the disease, and in six cases the fungus was isolated in pure culture. In addition to surgery, radiotherapy, iodides, and stilbamidine may be beneficial.

1206. LEDUC (A.). **Blastomycoses de l'Amérique du Nord (maladie de Gilchrist). Considérations mycologiques.** [North American blastomycoses (Gilchrist's disease). Mycological considerations.]—*Un. méd. Can.*, 82, 3, pp. 282–283, 1 fig., 1953.

During the two years prior to the time of writing four cases of North American blastomycosis (*Blastomyces dermatitidis*) were diagnosed at the Hôpital Notre-Dame, Montreal, of which one, in a 54-year-old female, is briefly described, with observations on the morphological and cultural characters of the fungus and its differential diagnosis.

1207. COLSKY (J.). **Treatment of systemic blastomycosis with 2-hydroxystilbamidine.**—*Arch. intern. med.*, 93, 5, pp. 796–801, 3 figs., 1954.

A case is reported from the State University of New York College of Medicine of a young man with pulmonary, osseous, muscular, and cutaneous blastomycosis. Biopsies made from the bronchi, tendo Achillis, and nasolabial fold showed granulation tissue. The last two biopsies revealed refractile spherical bodies and *Blastomyces dermatitidis* was cultured from the nasal tissue.

Treatment with 2-hydroxystilbamidine for 50 days, totalling 11.25 gm., resulted in a rapid resolution of symptoms.

1208. CURTIS (A. C.), BOCOCO (F. C.), HARRELL (E. R.), & BLOCK (W. D.). **The effect of stilbenes and related compounds on the mycoses.**—*U.S. Forces med. J.*, 5, 7, pp. 949-952, 1954.

The authors review briefly the literature on the use of a group of aromatic diamidines (stilbamidine, propamidine, and pentamidine) and the closely related compounds ethylstilbamidine and diethylstilbestrol on the treatment of mycotic infections. Five cases of North American blastomycosis [*Blastomyces dermatitidis*] treated with stilbamidine at the University of Michigan Hospital are then described. There was apparent clinical remission with disappearance of the organism and regression of the lesions in all five cases, but the disease recurred in three. *In vitro* studies suggested that the causal organism isolated from one patient had acquired some resistance to the drug. Two of the patients developed the late toxic reaction of trigeminal neuropathy.

The *in vitro* anti-fungal activity of 55 compounds structurally related to stilbamidine was tested. The most promising were various nitrostyrene derivatives [cf. 2, No. 1160].

1209. MYHR (I. B.). **Systemic blastomycosis; report of a case treated with stilbamidine.**—*Amer. Practit.*, 5, 1, pp. 64-66, 3 figs., 1954.

The successful treatment of pulmonary blastomycosis (*Blastomyces dermatitidis*) in a 15-year-old girl by a seven-week course of stilbamidine therapy (total of 5.4 gm.) is reported from Jackson, Tennessee. Three residual skin lesions healed completely following administration of potassium iodide and superficial radiation.

1210. OSTFELD (A. M.). **Effect of stilbamidine on cutaneous blastomycosis.**—*Amer. J. Med.*, 15, 5, pp. 746-748, 1953.

A skin lesion with serosanguineous discharge on the right malar area of a 54-year-old woman patient at the Barnes Hospital, St. Louis, Missouri, yielded cultures positive for *Blastomyces dermatitidis*. The lesion was cured by treatment with intravenous stilbamidine over a three-year period. The accompanying nausea and trigeminal nerve involvement were not severe enough to necessitate the discontinuance of treatment.

1211. SNAPPER (I.) & McVAY (L. V.). **The treatment of North American blastomycosis with 2-hydroxystilbamidine.**—*Amer. J. Med.*, 15, 5, pp. 603-623, 14 figs., 1953.

At the John Gaston Hospital, Memphis, Tennessee, three negro patients, 40- and 29-year-old males and a four-year-old girl, suffering from systemic North American blastomycosis (*Blastomyces dermatitidis*) were successfully treated with 2-hydroxystilbamidine [2, No. 702], which was also applied with excellent results to cutaneous lesions on the nose and face of an 84-year-old white man. Extensive clinical and laboratory studies yielded no definite evidence of toxicity resulting from the protracted and copious administration of the drug; it may be advantageously combined with aureomycin in critical systemic cases such as the first of the foregoing, a preliminary report on which has already been noticed [1, No. 2408]. In *in vitro* experiments 2-hydroxystilbamidine exerted a marked inhibitory action on four strains of the fungus.

1212. STEEN (L. H.), FOXWORTHY (D. T.), & BAKER (L. A.). **Acute blastomycotic pneumonia. Report of a fatal case of short duration diagnosed by needle biopsy of lung.**—*Arch. intern. Med.*, 93, 3, pp. 464-472, 4 figs., 1954.

A full description is given of the clinical, laboratory, and radiological findings

in a case of North American blastomycotic pneumonia (*Blastomyces dermatitidis*) in a negro foundry-worker, aged 36, at the Veterans Administration Hospital, Hines, Illinois. Diagnosis was made by histological examination of material obtained by needle biopsy of the lung, supported by X-ray- and microphotographs. The patient died before the results of any treatment could be appraised.

1213. THOMPSON (W. F.). **Blastomycosis of bone ; report of a case.**—*J. Bone Jt. Surg.*, 35, 3, pp. 777–781, 1953.

From the Orthopaedic Service, Maine General Hospital, Portland, a case of systemic blastomycosis [*Blastomyces dermatitidis*] in a 57-year-old farmer is reported. Infection probably arose in the respiratory tract. Later, draining sinuses developed in the left hand and right and left legs. Bone of the left leg and right foot was also infected. The disease was diagnosed by the appearance of biopsy specimens and the causal organism was not cultured. The patient was treated with large doses of potassium iodide with apparently complete recovery.

1214. LÖVEI (E.) & BOGSCH (A.). **Beobachtungen an einheimischen Lungenblastomikosefällen (Morbus Gilchristi).** [Observations on indigenous cases of pulmonary blastomycosis (Gilchrist's disease).]—*Fortschr. Röntgenstr.*, 81, 4, pp. 449–455, 5 figs., 1954. [English, French, and Spanish summaries.]

Three cases—a female aged 44 and two males, 59 and 60—of pulmonary blastomycosis (*Blastomyces dermatitidis*) are reported from the medical clinic of the University of Budapest, Hungary. The X-ray findings are not characteristic. Radiological signs include a 'moth-eaten' structure, enlargement of the perihilar glands, and massive lung infiltration, but a definite diagnosis can be made only by continuous examinations of the sputum. Leucocytosis and eosinophilia are confirmatory signs of the disease. The administration of potassium iodide combined with desensitization gave encouraging results.

1215. BENHAM (RHODA W.). **Cryptococcus neoformans : 'an Ascomycete'.**—*Proc. Soc. exp. Biol.*, N.Y., 89, 2, pp. 243–245, 5 figs., 1955.

After two months' incubation on malt extract agar at 30° C. at the College of Physicians and Surgeons, Columbia University, New York, cells resembling empty, collapsed, thin-walled sacs were detected in a nigrosin mount of a mixture of two strains of *Cryptococcus neoformans* and two of its var. *innocuus* [2, No. 748]. Further observation revealed the presence of spores, some cells containing two, others four or eight. Similar structures, also containing spores, developed in one of the four pure strains, isolated from a spontaneous cerebral infection in a dog. Transferred to Noyes's starch ammonium agar (*J. Bact.*, 1, p. 93, 1916), both the mixture and the pure strain produced a large number of asci in three weeks. The type of ascus formation appeared to be quite distinct from that normally observed in the yeasts and resembled Lodder and van Rij's description of *Lipomyces*, representing a new subfamily, the Lipomycetoideae, of the Endomycetaceae (The yeasts, a taxonomic study, 1952). The canine strain of *C. neoformans* under observation agrees with Starkey's *L. starkeyi*, isolated from soil, and it is considered probable that the two organisms are identical. This is believed to be the first report of the 'ghost' type of ascus formation in a known pathogenic strain of *C. neoformans*.

1216. BENHAM (RHODA W.). **The genus *Cryptococcus* : the present status and criteria for the identification of species.**—*Trans. N.Y. Acad. Sci.*, Ser. II, 17, 5, pp. 418–429, 2 pl., 1955.

Eight contributions to the knowledge of the genus *Cryptococcus* form the

basis of this tabulated survey of the current position regarding the classification of the species and varieties comprised therein.

1217. EISEN (D.), SHAPIRO (I.), & FISCHER (J. B.). **A case of cryptococcosis with involvement of lungs and spine.**—*Canad. med. Ass. J.*, 72, 1, pp. 33–35, 3 figs., 1955.

The first case of cryptococcosis (*Cryptococcus neoformans*) with involvement of both lungs and spine to be recorded from Canada is reported from the New Mount Sinai Hospital, Toronto. The patient, a 29-year-old woman, was given sulphadiazine therapy, which quickly reduced the large abscess in her back, though a discharging sinus persisted until the infected portion of the underlying spinous process was surgically removed. The lung involvement was asymptomatic. She was reported to be in good health six years after treatment.

1218. EVANS (E. E.), SORESENSEN (L. J.), & WALLS (K. W.). **The antigenic composition of *Cryptococcus neoformans*. V. A survey of cross-reactions among strains of *Cryptococcus* and other antigens.**—*J. Bact.*, 66, 3, pp. 287–293, 1953.

A survey at the Department of Bacteriology, University of Michigan, demonstrated serological relationships between *Cryptococcus neoformans* [2, No. 748] and *Candida albicans*, *Saccharomyces cerevisiae*, trichophytin, pneumococcus type 2, and gum tragacanth. Strains of *Cryptococcus neoformans* isolated from soil reacted in types A and B and polyvalent anticryptococcal sera.

A method is described for the preparation of polyvalent antiserum capable of reacting with the three known types of *C. neoformans*. Cells of type C from infected mice appear to differ antigenically from those grown in culture.

1219. HOSP (L.). **Über Sprosspilzinfektion (Blastomykose) der Haut und des Knochens.** [On cutaneous and osseous yeast fungus infection (blastomycosis).]—*Münch. med. Wschr.*, 96, 23, p. 670, 1 fig., 1954.

Torula histolytica [*Cryptococcus neoformans*] was isolated from the wine-coloured exudate of a tumour on the right temple of a 71-year-old female patient in a Viennese hospital. A cure was effected by local applications of iodine, injection of autovaccines, and radiotherapy.

1220. LINE (F. G.). **A case of *Cryptococcus* (*Torula*) meningitis treated with ethyl vanillate.**—*J. Tenn. med. Ass.*, 47, 7, pp. 292–294, 1954.

A case of meningitis caused by *Cryptococcus neoformans* in a 12-year-old girl is reported from Knoxville, Tennessee. A temporary improvement after a short course of ethyl vanillate therapy was followed by a relapse, and death occurred about nine months after the onset of the symptoms.

1221. LIU (C. T.). **Intercerebral cryptococcic granuloma ; case report.**—*J. Neurosurg.*, 10, 6, pp. 686–689, 1 fig., 1953.

From the Veterans Administration Hospital, Canandaigua, New York, the author reports a case of intracerebral granuloma caused by *Cryptococcus neoformans* in a 35-year-old factory-worker. A year after operation for the removal of the calcified mass in the right frontal lobe the patient was apparently well.

1222. DE BUEN (S.), ZIMMERMAN (L. E.), & FOERSTER (HELENOR C.). **Patología ocular en la cryptococosis.** [Ocular pathology in cryptococcosis].—*Rev. Inst. Salubr. Enferm. trop., Méx.*, 14, 3, pp. 163–178, 6 figs., 1954. [English summary.]

Ophthalmic manifestations are frequently observed in the course of

meningo-encephalitis caused by *Cryptococcus neoformans* [2, No. 747], but direct involvement of the eye, orbit, or optic nerve has seldom been reported [1, No. 1631]. However, two cases at the Armed Forces Institute of Pathology, Washington, demonstrated that there may be direct extension of the infection process from the meninges along the optic nerves or from primary infection sites in the paranasal sinuses, orbital bones, or skin, or there may be haematogenous localization in the eye during the final phases of disseminated infection, and two unique cases are described of cryptococcal chorio-retinitis in women over 70 years of age showing no other evidence of the disease.

1223. POPPE (J. K.). **Cryptococcosis of the lung ; report of two cases with successful treatment by lobectomy.**—*J. thorac. Surg.*, 27, 6, pp. 608–613, 1954.

Two cases of cryptococcosis of the lung (*Cryptococcus neoformans*) affecting men aged 43 and 31 years respectively, in which the discrete lesions were removed by lobectomy, are described from Portland, Oregon. There was no recurrence of the disease after 18 months in the first case and six in the second. In the early stage of the disease, before cerebral infection has begun, the yeast cells cannot be found in sputum or bronchoscopic aspirates and the lesion is usually mistaken for cancer. Positive diagnosis at this stage is only possible by examination of the resected specimen.

1224. SEGRETAIN (G.) & COUTEAU (Mlle M.). **Différenciation entre torulopsis (*Cryptococcus neoformans*) et corps amyloïdes du système nerveux central.** [Differentiation between torulopsis (*Cryptococcus neoformans*) and starch bodies in the central nervous system.]—*Ann. Inst. Pasteur*, 88, 1, pp. 128–132, 1 pl., 1955.

In doubtful cases *Cryptococcus neoformans* may be differentiated from starch bodies in sections of nerve tissue by ten minutes' treatment with a reagent consisting of 1.5 gm. each of crystallized iodine and sodium chloride, 3 gm. potassium iodide, and 150 ml. each of distilled water and alcohol (95°). The fungal elements do not stain but their capsules become strongly refringent and are surrounded by a distinct halo, while the starch bodies are coloured more or less dark brown.

1225. VAN GOIDSENHOVEN (F.), JAMAR (J.), & VAN BAARLE (F.). **Commentaires au sujet d'un cas de 'mycose pulmonaire' (cryptococcose) dont l'aspect radiologique avait été attribué à des métastases pulmonaires hématogènes.** [Observations on the subject of a case of 'pulmonary mycosis' (cryptococcosis) the radiological picture of which had been attributed to haematogenous pulmonary metastases.]—*Acta clin. belg.*, 9, 3, pp. 272–278, 3 figs., 1954. [Flemish and English summaries.]

A case of pulmonary cryptococcosis (*Cryptococcus neoformans*) in a 27-year-old male, characterized by the spontaneous regression of the lesions, which were radiologically similar to diffuse haematogenous metastases in the lung parenchyma, is reported from Louvain, Belgium. The illness developed during a two-year period of agricultural work in the United States, and the diagnosis was made by means of cutaneous tests.

1226. WHITEHILL (M. R.) & RAWSON (A. J.). **Treatment of generalized cryptococcosis with 2-hydroxystilbamidine. Report of a case with apparent cure.**—*Virginia med. (Semi-)Mon.*, 81, 12, pp. 591–594, 2 figs., 1954.

At the Norfolk (Virginia) General Hospital a 16-year-old coloured girl suffering from generalized cryptococcosis (*Cryptococcus neoformans*) was treated with 4.05 gm. di-hydroxystilbamidine, administered intravenously over a period of 19 days, with apparently complete success.

1227. BECK (A.), HUTCHINGS (M. W.), MAKEY (A. R.), & TUCK (I. M.). **Infection with *Cryptococcus neoformans* in Man. Report of two cases.**—*Lancet*, 1955, pp. 535-538, 7 figs., 1955.

Two cases of cryptococcosis are reported from the North-Western Group Laboratory, London. The first was a man of 27, who was admitted to hospital in 1950 with a three months' history of loss of the use of his right hand and three weeks' history of vertigo, headache, vomiting, and muscular weakness. *Cryptococcus neoformans* was cultured from the cerebro-spinal fluid. Despite treatment with penicillin, streptomycin, and sulphonamides, the patient became comatose and died. At post-mortem the meninges showed infiltration with mononuclear cells, and a few giant cells and numerous cryptococci were seen. The organism was pathogenic to guinea-pigs and mice by intraperitoneal injection.

The second case was admitted for the investigation of a lesion at the base of the left lung. The patient had no cough, but some pain in his left chest. It was suspected that the lung lesion was tuberculous and a left basal segmental resection was carried out. The patient recovered uneventfully and was discharged from hospital. The excised lung tissue contained yellow nodules of varying size. Highly refractile spheroid bodies, characteristic of *Cryptococcus neoformans*, were seen in giant cells of the granulomatous tissue of the lesions and in some macrophages. As the tissue had been fixed in formalin, it was impossible to culture the organism.

1228. RAMAMURTHI (B.) & ANGULI (V. C.). **Intramedullary cryptococcic granuloma of the spinal cord.**—*J. Neurosurg.*, 11, 6, pp. 622-624, 4 figs., 1954.

The first report of a circumscribed, intramedullary, cryptococcic granuloma (*Cryptococcus neoformans*) of the spinal cord, which was successfully removed, is recorded from the General Hospital, Madras, India. The patient was a 17-year-old girl, who made a complete recovery after the operation. The tumour mass measured $\frac{5}{8}$ " \times $\frac{3}{8}$ ", was encapsulated, and contained numerous yeast-like bodies resembling *C. neoformans*. Cultures were not made.

1229. SMITH (D. L.), FISCHER (J. B.), & BARNUM (D. A.). **Generalized *Cryptococcus neoformans* infection in a Dog.**—*Canad. med. Ass. J.*, 72, 1, pp. 18-20, 4 figs., 1955.

The first Canadian record of infection of a lower animal by *Cryptococcus neoformans* is reported from Guelph, Ontario. The organism was isolated from white, ulcerating papules on the tongue and in the mouth of a five-year-old cocker spaniel dog, and the symptoms included a dry cough, discharge from the eyes and nose, and soreness round the claws. The animal was destroyed after potassium iodide therapy failed to bring about improvement. At autopsy the lung, mediastinal lymph nodes, and spleen were shown to be involved. The owner of the dog and his family did not appear to have contracted the disease.

1230. MONTEIRO (A.) & APRIGLIANO (F.). **Blastomicose primitiva do laringe.** [Primary blastomycosis of the larynx.]—*Rev. bras. Oto-rino-laring.*, 22, 1, pp. 13-19, 1954.

Two cases of laryngeal blastomycosis (Lütz's disease) [*Paracoccidioides brasiliensis*], both in males aged 38 and 51, are reported from Rio de Janeiro, Brazil, and briefly discussed in relation to distribution, symptoms, diagnosis, prognosis, and therapy. The patients derived considerable benefit from the administration of sulphadiazine tablets.

1231. DUPONT (C. A. B.), GUEROL (H. E.), MUZZIO (J. C.), & ZAPATER (R. C.). **Blastomycosis sudamericana cutáneo laringopulmonar.** [Cutaneous laryngo-pulmonary South American blastomycosis.]—*Prensa méd. argent.*, 41, 14, pp. 933-940, 13 figs., 1954.

The clinical course of a case of laryngo-pulmonary South American blastomycosis (*Paracoccidioides brasiliensis*) in a 42-year-old patient at the Military Hospital, Buenos Aires, is fully described and discussed. An apparently complete cure was effected by the administration of massive doses of sulphadiazine. Attention is called to the increasing frequency of the disease in Argentina and its protracted incubation period.

1232. OLIVEIRA (N. H.). **Case reports. Blastomycosis of the larynx.**—*Arch. Otolaryng.*, Chicago, 55, 6, pp. 716-717, 1952.

The chief interest of this case of blastomycosis [*Paracoccidioides brasiliensis*] affecting a white man stationed at Friburgo, Brazil, and reported from the Central Naval Hospital, lies in the localization of the lesion on the vocal chord only. It was cured by sulphonamide therapy. Rabello's classification of the types of blastomycosis is given.

1233. PALTAUF (R.). **Lung : blastomycosis (Brazilian).**—*Brooklyn Hosp. J.*, 11, 3, pp. 157-159, 3 figs., 1953.

A description is given of a portion, 10 by 8 by 5 cm. in major dimensions, obtained by segmental resection of the right lung of a 52-year-old male Venezuelan patient at the Lenox Hill Hospital, New York. An exploratory operation to discover the cause of six weeks' pain in the upper right portion of the back and right shoulder had disclosed marked emphysema of the entire lung, particularly pronounced in the apical portions of the upper and lower lobes. Much of the parenchyma had been replaced by extensively necrotized granulation tissue, from which *Blastomyces* [*Paracoccidioides*] *brasiliensis* was isolated in pure culture.

1234. DEL NEGRO (G.), MELO E ALBUQUERQUE (F. J.), & DE CAMPOS (E. P.). **Localização nervosa da blastomicose sul-americana. (Revisão da literatura e registro de dois casos.)** [Nervous localization of South American blastomycosis. (Review of the literature and report of two cases.)]—*Rev. Hosp. Clín.*, S. Paulo, 9, 1, pp. 64-80, 7 figs., 1954. [English summary.]

Following a survey of the 15 records of neuro-paracoccidioidal blastomycosis (*Paracoccidioides brasiliensis*) in the relevant literature, the authors fully describe from São Paulo, Brazil, two cases of the disease, both in males (motor mechanics), aged 35 and 31. In the former patient the tentative diagnosis was not confirmed until autopsy; at the time of writing the latter (in whom the lungs, pharynx, and possibly other organs were also involved) was still undergoing intensive sulphadiazine therapy with excellent results. In this case the fungus could not be detected in the cephalo-rachidian fluid.

1235. SADEK (H. M.) & VASCONCELOS (E.). **Blastomicose perianal.** [Perianal blastomycosis.]—*Arq. cirurg. clín.*, 16, 1-6, pp. 11-19, 9 figs., 1953. [English summary.]

Perianal blastomycosis (*Paracoccidioides brasiliensis*) is stated to be extremely rare. Three cases have been reported in the literature but in only one of these were the lesions primarily perianal. At a surgical clinic of the University of São Paulo, Brazil, the authors' patient, a 47-year-old male, was successfully treated with sulphadiazine at a dosage of two tablets every four hours for 32 days (a total of 176 gm.).

1236. CROW (K. D.) & RIDDELL (R. W.). **Chromoblastomycosis.**—*Proc. roy. Soc. Med.*, 47, 8, pp. 655–657, 1954.

A West Indian negro aged 36 who had lived in England for two years showed a slowly growing lesion on the right elbow of twelve years' duration. He had been employed on a farm at the time of infection. Examination revealed a horse-shoe lesion on the point of the elbow, with central scarring and peripheral scaling infiltration. Removal of the scales left a dry, red, granulomatous surface. The lesion had always been dry and never painful or itching. Epidermal hyperplasia was present with severe chronic inflammation. *Hormodendrum* [*Phialophora*] *pedrosoi* was isolated on culture. It was proposed to treat the patient by excision and skin grafting.

1237. TREJOS (A.). **Cladosporium carrionii n.sp. and the problem of Cladosporia isolated from chromoblastomycosis.**—*Rev. Biologia Trop.*, 2, 1, pp. 75–112, 15 figs., 1954.

From the Laboratorio Bacteriológico, Hospital San Juan de Dios, San José, Costa Rica, the author presents a study of the fungi isolated from cases of chromoblastomycosis, which produce spores exclusively on *Cladosporium*-type conidiophores. A study of the literature describing 46 isolates (three from South Africa [1, No. 709], 18 from Australia [2, No. 58], and 25 from Venezuela [1, No. 289; 2, No. 722]) and a personal study of seven of these isolates (four from Australia and three from Venezuela) led to the conclusion that all of them correspond to a single new species for which the name *Cladosporium carrionii* n.sp. is proposed.

The fungus forms greyish-brown, furrowed colonies, usually well defined and surrounded by a darker halo of submerged mycelium. The under side of the colony is black. The hyphae, 1 to 3 μ in diameter, may consist of (1) cubic or rounded cells, bearing terminally chains of elements, which may be considered atypical spores, (2) chlamydospore-like elements, and (3) 'coralloid' hyphae. Conidiophores of the *Hormodendrum* type are formed bearing basifugal, branched spore chains, the spores (or thalloconidiospores) being (3) 4 to 5 (9.5) by (2) 2.5 (3) μ . *C. carrionii* is distinguished from *C. trichoides*, a pathogenic species isolated from brain abscesses [1, No. 2406], by its slower growth, its greater spore length, and its dermatropism as contrasted with the neurotropism of *C. trichoides*. Comparative studies on the pathogenicity of *C. carrionii* and related species are stated to be in progress.

1238. DENNIS (J. L.) & HANSEN (A. E.). **Coccidioidomycosis in Children.**—*Pediatrics*, 14, 5, pp. 481–494, 8 figs., 1954.

The authors describe, from the Department of Pediatrics, University of Texas Medical Branch, Galveston, Texas, cases of coccidioidomycosis (*Coccidioides immitis*) in two boys and two girls, the ages varying from 2 to 15 years, suffering from disseminated forms of the disease. Of the chemotherapeutic agents used, ethyl vanillate was found to be the most satisfactory, but toxicity, difficulty of administration, and varying response of the disease are difficulties encountered in its use.

In an effort to obtain a satisfactory technique for testing fungicides *in vitro*, the authors state that they were able to obtain spherules by growing the fungus in tissue cultures in a perfusion type culture chamber. These spherules showed some degree of reversion to mycelium.

1239. TOWNSEND (T. E.) & McKEY (R. W.). **Coccidioidomycosis in Infants.**—*Amer. J. Dis. Child.*, 86, 1, pp. 51–53, 1953.

From the Kern General Hospital, Bakersfield, California, a case of dis-

seminated coccidioidomycosis (*Coccidioides immitis*) in a three-week-old female infant is reported. Death occurred at the age of two months. Unusual features of the case include the extreme youth of the patient, the negative results of coccidioidin skin tests, the presence of endocardial lesions revealed at autopsy, and the excessively large dimensions of the spherules in the lung and spleen.

1240. HIRSCHMANN (V. R.). **Primary cutaneous coccidioidomycosis.**—*Med. Bull. U.S. Army, Europe*, 10, 8, pp. 189–191, 1953.

The examination of a 25-year-old negro soldier suffering from a cutaneous nasal infection at the 97th General Hospital of the United States of America demonstrated that *Coccidioides immitis* was the agent.

1241. HYDE (L.). **Recurrence of coccidioidal cavity following resectional surgery.**—*Amer. Rev. Tuberc.*, 71, 1, pp. 131–136, 6 figs., 1955.

From the Veterans Administration Hospital, Long Beach, California, a description is given of lung cavitation caused by *Coccidioides immitis* in a 22-year-old man resident near an endemic area in South California. The organism was isolated from the cavity wall following resection of the affected segment of the left lung. A large cavity developed in the remaining segment, but this closed later without treatment. The author believes that a coccidioidal pulmonary cavity is not usually dangerous for the patient or for others, and seldom requires therapy. The greatest danger is probably isthrogenic disability.

1242. FORSEE (J. H.) & PERKINS (R. B.). **Focalized pulmonary coccidioidomycosis. A surgical disease.**—*J. Amer. med. Ass.*, 155, 14, pp. 1223–1227, 7 figs., 1954.

This is a review of 50 cases of pulmonary coccidioidomycosis (*Coccidioides immitis*) treated by resection at Denver, Colorado, during the period from 1945 to 1953. All had been in the endemic area of the south-western United States. In 22 cases the symptoms were exclusively chronic, while in 13 they were both acute and chronic. None of the patients was seriously ill. Diagnosis was based on X-ray findings, bronchoscopy, sputum examination, and skin tests. On the basis of radiological examination the cases were divided into those with solid lesions (20) and those with cavities (30), but only 15 were diagnosed with certainty as coccidioidomycosis before operation, though in another 13 the disease was strongly suspected. There were no operative or post-operative deaths, and of 44 of the patients who were followed for periods varying from one month to 7½ years, 37 remained asymptomatic, five had mild symptoms, and two were incapacitated at the time of writing. Two patients required further operation, two had further spread of the disease which healed without surgery, and one a bronchopleural fistula with empyema, from which he recovered.

1243. CARDONA (A.) & VELÁZQUEZ (T.). **Infección del sistema nervioso central por *Coccidioides immitis*. (Estudio de un caso con necropsia.)** [Infection of the central nervous system by *Coccidioides immitis*. (Study of a case with necropsy.)]—*Rev. Inst. Salubr. Enferm. trop., Méx.*, 14, 3, pp. 179–188, 7 figs., 1954. [English summary.]

The authors describe the first case of *Coccidioides immitis* affecting the central nervous system [1, No. 1672] in Mexico recorded in a 30-year-old labourer. The autopsy revealed an acute disseminated condition [2, No. 299]. The disease was probably contracted in the southern United States.

1244. NEGRONI (P.). **Estudios sobre el *Coccidioides immitis* Rixford et Gilchrist. IX. Ciclo evolutivo.** [Studies on *Coccidioides immitis* Rixford & Gilchrist. IX. Evolutive cycle.]—*Rev. Inst. Malbrán*, 15, 1, pp. 18–24, 4 figs., 1950–1953. [English and French summaries.]

This further contribution to the series [2, Nos. 995, 996] was concerned with the development cycle of *Coccidioides immitis* in inoculated guinea-pigs. In culture only a single phase was observed, i.e., the formation of 'entospores' (thallospores) which reproduced the original mycelium when transplanted on fresh media. In the guinea-pig, however, the organism showed a polymorphic development. Forty-eight hours after the first inoculation the 'entospores' become 'primo-infection sporangia' which attain a diameter of 98μ and are characterized by a thin peridial membrane, a fertile peripheral protoplasm 15 to 17μ thick forming protospores and later sporangia, and a central residual protoplasm. Dehiscence occurs through an ostiole 6 to 7μ in diameter, the empty sporangia being invaded by white blood cells (the infective phase of Posadas). Acquired resistance produces fungistasis and probably the destruction of the fungus by giant cells, and is characterized by a retardation of development and the encystment of the parasite. The former is marked by the disappearance of the central vacuole and residual protoplasm, reduction in number and volume of the sporangia, and developmental polymorphism (parasites of different ages). Encystment is characterized by thickening of the peridial membrane, young cystic parasites and sporangia with no residual protoplasm (cystic phase of Posadas), encystment of re-inoculated culture material, and an increase in fat reserves. Intermediate stages between this and primo-infection also occur. Re-inoculation produces rapid, accelerated reaction. The so-called copulation forms are only neighbouring 'entospores' of inoculated material or endospores of the sporangia adhering by their membranes.

1245. BIRSNER (J. W.). **The Roentgen aspects of five hundred cases of pulmonary coccidioidomycosis.**—*Amer. J. Roentgenol.*, 72, 4, pp. 556–573, 37 figs., 1954.

After a brief review of the epidemiology of coccidioidomycosis (*Coccidioides immitis*), in which he estimates that there are 25,000 to 35,000 new cases yearly, the author analyses, from the standpoint of the radiologist, 500 pulmonary cases seen at the San Joaquin Hospital and the Kern General Hospital, Bakersfield, California. As coccidioidomycosis is endemic in the area, very strict diagnostic criteria were applied, only cases confirmed by complement fixation tests, microscopy, or culture being included in the series. Of the 124 child patients between the ages of 0 and 13 years, only seven died, and the disease is therefore considered to be relatively benign in this age-group. Out of 352 cases in the age-group 14 to 60 years, 16 showed coexisting tuberculosis, and the disease is shown to be tracheobronchial as well as parenchymal. In this group 44 deaths occurred and 72 of the patients showed erythema nodosum or multiforme. Of the 24 patients over 60 years old, six died, and in this age-group the importance of distinguishing between bronchogenic carcinoma and the complications of coccidioidomycosis is emphasized. Some detailed conclusions of value to the radiologist are drawn from the series of cases, and it is suggested that all immigrants into endemic areas should be examined for coccidioidomycosis at regular intervals and that the disease should warrant industrial compensation.

1246. AMROMIN (G.) & BLUMENFELD (C. M.). **Coccidioidomycosis of the epididymis.**—*Calif. Med.*, 78, 2, pp. 136–138, 1953.

Two cases of coccidioidomycosis (*Coccidioides immitis*) involving the epi-

didymis and surrounding tissues are reported from California [1, No. 2430], one patient being aged 36 and the other 58. In one case three years had elapsed since an attack of pulmonary coccidioidomycosis which is believed to have been the primary source of infection. Only four previous cases of invasion of this particular site appear to be on record (cf. *Calif. Med.*, 72, pp. 3-6, 1950).

1247. COHEN (R.). **Diethylstilbestrol. A coccidioidal fungicide.**—*Arch. Pediat.*, 71, 9, pp. 291-292, 1954.

From the Kern General Hospital, Bakersfield, California, the writer reports the results of tests undertaken to confirm the demonstration of Bocobo *et al.* at the American Medical Association Meeting at San Francisco in 1954 that diethylstilbestrol [cf. 2, No. 51] inhibited the growth of *Coccidioides immitis* at a concentration of 0.01 mg. per ml. Cultures of the fungus on Sabouraud's medium from heavy sinus discharges, loaded with spherules, from a severe case of the disseminated form were totally suppressed by the compound at a strength of 1 mg. per ml. and almost completely inhibited at 0.5 mg., while the controls grew profusely. For practical purposes these results may be regarded as confirmatory of the above-mentioned finding.

1248. GORDON (L. E.), SMITH (C. E.), TOMPKINS (MARIANNE), & SAITO (MARGARET T.). **Sensitivity of *Coccidioides immitis* to 2-hydroxystilbamidine and the failure of the drug in the treatment of experimental coccidioidomycosis.**—*J. Lab. clin. Med.*, 43, 6, pp. 942-945, 1 fig., 1954.

In vitro tests at the University of California using tenfold dilutions of 2-hydroxystilbamidine in a fluid asparagine medium, with a standard inoculum of approximately 5,000 spores of *Coccidioides immitis* showed that complete inhibition of growth over the trial period of 21 days was achieved only in the presence of 100 μ gm. of the drug per ml., though some inhibitory effect occurred at 10 μ gm. per ml.

In vivo tests with mice infected intraperitoneally with approximately 150 spores of *C. immitis* and treated with 0.5 mg. of 2-hydroxystilbamidine daily (the maximum tolerated dose) for ten days, thereafter on alternate days for a further twenty days, showed no significant reduction in mortality compared with the control group which received no treatment. The treated group lived no longer than the control group, and no modification of their lesions was noted.

1249. BURGER (C. H.) & LEVAN (N. E.). **Coccidioidomycosis in the Dog. Report of three clinical cases.**—*J. Amer. vet. med. Ass.*, 126, 937, pp. 297-301, 6 figs., 1955.

Three cases of canine coccidioidomycosis (*Coccidioides immitis*) [2, No. 1009] are reported from Bakersfield, California, all observed during 1953-4 and presenting close analogies with the human manifestations of the disease. Since the dog may harbour a self-limiting pulmonary infection, as in one of the present series, numbers of such cases may well be going unrecognized in the enzootic area.

1250. EMMONS (C. W.). **Isolation of *Myxotrichum* and *Gymnoascus* from the lungs of animals.**—*Mycologia*, 46, 3, pp. 334-338, 4 figs., 1954.

In an attempt to delineate the endemic areas of coccidioidomycosis (*Coccidioides immitis*) in western Texas, cultures were made in 1949 from the lungs, spleen, and liver of 764 rodents and other animals, some of which are known to be natural hosts of *C. immitis*. This fungus was not isolated, but *Haplosporangium parvum* [1, Nos. 116, 1673, 2433] was obtained from seven animals. Among the saprophytes isolated were nine strains of *Myxotrichum* and three

of *Gymnoascus reessii*, all of which bore arthrospores closely resembling those of *Coccidioides*. No pulmonary lesions were detected, and the fungi did not produce disease in experimentally infected mice; they were able to survive mouse passage. Isolations of basidiomycetes and *Coprinus micaceus*, recognizable by clamp-connexions, were also made from sputum. It is assumed that the fungi isolated were represented in the animals by recently inhaled spores or were air-borne contaminants of the specimens collected.

1251. MENGES (R. W.) & HABERMANN (R. T.). **Isolation of *Haplosporangium parvum* from soil and results of experimental inoculations.**—*Amer. J. Hyg.*, 60, 2, pp. 106–116, 1 pl., 1954.

The isolation of *Haplosporangium parvum* [2, No. 1013] (Philips strain) from soil inside a barn on a farm in Boone County, Missouri, is reported. The results of inoculation experiments on mice, hamsters, rats, and cats with spores of the isolate are described and demonstrate its capacity to induce disease. Two positive reactors were found among the 93 cattle skin-tested in Kansas with an antigen of the soil strain of *H. parvum*.

1252. MORQUER (R.), LOMBARD (C.), & BERTHELON (M.). **Pouvoir pathogène de quelques espèces de *Geotrichum*.** [Pathogenic activity of some species of *Geotrichum*.]—*C. R. Acad. Sci., Paris*, 240, 3, pp. 378–380, 1955.

From the caseous nodules associated with porcine adenitis at Oran, Algeria, *Geotrichum candidum* was isolated on Sabouraud's agar. The radiating, velvety, greyish, tenacious colonies gave rise exclusively to arthrospores, 3 to 6 by 3 to 4 μ . Inoculation experiments on laboratory animals with the same species and *G. versiforme* gave positive results. Both species (and others of the same genus) are pathogenic to man.

1253. AJELLO (L.). **Occurrence of *Histoplasma capsulatum* and other human pathogenic molds in Panamanian soil.**—*Amer. J. trop. Med. Hyg.*, 3, 5, pp. 897–904, 7 figs., 1954.

Histoplasma capsulatum, *Allescheria boydii*, and *Microsporium gypseum*, not previously recorded in the soil of tropical America, were isolated from the soil on the Isthmus of Panama and identified at the Communicable Disease Center, Public Health Service, Atlanta, Georgia.

1254. ZIMMERMAN (L. E.). **A missing link in the history of histoplasmosis in Panama.**—*U.S. Armed Forces med. J.*, 5, 11, pp. 1569–1573, 3 figs., 1954.

From the Armed Forces Institute of Pathology, Washington, D.C., the author reports the discovery of organisms with the morphological characteristics of *Histoplasma capsulatum* in a pulmonary granuloma from a four-year-old native Panamanian child who died at the Colon Hospital, Cristobal, in 1931. This case provides a missing link in the history of histoplasmosis in Panama. The disease was first described from that country by Darling, who encountered three cases in 1906, but no further human cases were recorded until 1951 [1, No. 2280], although a high percentage of positive reactors to histoplasmin was reported [1, No. 2279].

1255. DE CARVALHO (A.). **Novos ensaios sobre os reatores positivos à histoplasmina na cidade de Rio de Janeiro. Estudo baseado em 3,653 indivíduos.** [New experiments on positive reactors to histoplasmin in the city of Rio de Janeiro. Study based on 3,653 individuals.]—*Rev. bras. Tuberc.*, 22, 154, pp. 693–772, 25 figs., 1 graph, 1954. [English summary.]

This important, fully detailed study on the application of the histoplasmin

test in Rio de Janeiro, Brazil [1, No. 2438], is supplemented by an extensive bibliography of the relevant literature from 1906 to 1954. Of the 3,653 persons tested during a seven-year period, 598 (16.4 per cent.) reacted positively, the maximum frequency of 33.3 per cent. occurring in the 40- to 60-year age group. In most cases the positive response persisted for two months to three years, and in some even up to four. The positive reactors included 256 (42.8 per cent.) with residual pulmonary X-ray pictures, the most frequent being the hard pulmonary complex (in about half the cases) and the generally unilateral parenchymatous calcification. A very characteristic radiological feature was disseminated calcification, which was found in 6.6 per cent. of the total.

1256. POLLAK (L.). **Histoplasmosis en Venezuela. Ensayo epidemiológico.** [Histoplasmosis in Venezuela. An epidemiological assay.]—*Rev. Sanit. Asist. soc.*, 18, 3-4, pp. 569-579, 1953.

The reactions of 1,040 persons to intradermal tests with histoplasmin in 1951-2 are reported from Caracas, Venezuela. Among 274 tuberculous patients between the ages of 18 and 68 from the Simón Bolívar Sanatorium, there were 84 (30.65 per cent.) positive reactors, the corresponding numbers for a group of 401 healthy subjects between 18 and 50 being 125 (31.11) and for a group of 365 pupils aged 15 to 31 at invalid schools 130 (35.61). Evidence of pulmonary calcification was found in 17 out of 45 cases in the last group reacting positively to histoplasmin and negatively to tuberculin. As a result of this inquiry, histoplasmosis (*Histoplasma capsulatum*) is thought to be probably present in the country.

1257. REEVES (R. J.). **Pulmonary histoplasmosis.**—*Amer. J. Roentgenol.*, 72, 5, pp. 769-771, 2 figs., 1954.

A case of relatively benign pulmonary histoplasmosis (*Histoplasma capsulatum*), presenting a typical Roentgenological appearance of disseminated pulmonary calcification, is described from the Duke University School of Medicine, Durham, North Carolina, in a 39-year-old man who had been in close contact with pigeons.

1258. ZEIDBERG (L. D.). **A theory to explain the geographic variations in the prevalence of histoplasmin sensitivity.**—*Amer. J. trop. Med. Hyg.*, 3, 6, pp. 1057-1065, 3 maps, 1955.

Evidence is presented and tabulated which demonstrates that the percentage of positive histoplasmin reactors is significantly higher in areas of the globe with red-yellow podzolic soils than elsewhere (20.1 as compared with 4.6). It is postulated that such soils, because of certain physical, chemical, or biological characteristics—as yet unknown—provide the best natural habitats for the growth of *Histoplasma capsulatum* [2, No. 1023].

1259. ZEIDBERG (L. D.) & AJELLO (L.). **Environmental factors influencing the occurrence of *Histoplasma capsulatum* and *Microsporum gypseum* in soil.**—*J. Bact.*, 68, 2, pp. 156-159, 1954.

Of the 493 soil samples collected in Williamson County, Tennessee, from 1950 to 1952, 5.7 per cent., mostly from soils obtained from chicken houses and yards, yielded *Histoplasma capsulatum* and 38 per cent. of 71 of the samples, mostly from barns, barnyards, and places where animals are concentrated, yielded *Microsporum gypseum*. The association of the former fungus with chickens, which do not serve as reservoir of histoplasmosis, is unexplained. The comparative ecology of the two fungi is discussed and the need for studying the occurrence of micro-organisms in their natural habitat is emphasized.

1260. ALEXANDER (J. T.) & BAKIR (F.). **Acute disseminated histoplasmosis; report of a case diagnosed by needle biopsy of the spleen and liver.**—*Med. Ann. D.C.*, 22, 7, pp. 359–361, 1953.

A fatal case of acute, disseminated histoplasmosis in a 29-year-old coloured housewife is reported from the Gallinger Municipal Hospital, District of Columbia. Material obtained by needle biopsies from the liver and spleen, bone marrow slides, and sections of the lymph node revealed the presence of *Histoplasma capsulatum*.

1261. FURCOLOW (M. L.), SCHWARZ (J.), HEWELL (BARBARA A.), & GRAYSTON (J. T.). **Incidence of tuberculin, histoplasmin, and blastomycin reactors among a group of school children.**—*Amer. J. publ. Hlth*, 43, 12, pp. 1523–1531, 2 figs., 1953.

A survey of the skin reactions to tuberculin, histoplasmin, and blastomycin of 7,194 white school children in the Cincinnati–Ohio area is reported in this joint contribution from the Communicable Disease Center, University of Kansas Medical Center, and the University of Cincinnati College of Medicine. The rate of reaction to histoplasmin was high, increasing from 15 per cent. at five years of age to 80 per cent. at 18 years. The average rate among lifetime residents of the area was 35.6 per cent. positive while the non-lifetime residents showed 42 per cent. positive. There was considerable variation in sensitivity both within and between the different communities studied. The rate of reaction to blastomycin was about one-third of the rate of reaction to histoplasmin. With one exception, positive blastomycin reactions were found only in the presence of, and were much smaller than, positive histoplasmin reactions, suggesting that the blastomycin reactions were cross-reactions.

1262. FURCOLOW (M. L.), FEDERSPIEL (C. F.), & LARSH (H. W.). **Histoplasmin, coccidioidin, and tuberculin sensitivity among school children in two Texas counties.**—*Publ. Hlth Rep., Wash.*, 70, 1, pp. 12–18, 3 graphs, 1 map, 1955.

Histoplasmin, tuberculin, and coccidioidin tests were performed on 2,700 persons of school age in Bell and Coryell Counties, Texas, in 1953 [cf. 2, No. 1027]. Sensitivity to histoplasmin was found to increase with age among lifetime residents, reaching 40 per cent. positive in the 18–19-year-old group, a somewhat higher prevalence than would be expected for the area on the basis of previous studies. Physicians should therefore be prepared to encounter cases of histoplasmosis (*Histoplasma capsulatum*). On the other hand, coccidioidin sensitivity was low, indicating that *Coccidioides immitis* is not endemic in the region under observation.

1263. BOND (J. O.) & WHITLOCK (E.). **Histoplasmin and tuberculin sensitivity.**—Florida, 1954.—*Publ. Hlth Rep., Wash.*, 69, 12, pp. 1141–1144, 1954.

Of 845 inmates of a mental hospital in central Florida tested for sensitivity to histoplasmin and tuberculin, 11.7 reacted positively to the former and 54.4 per cent. to the latter antigen, the corresponding figures for 476 lifelong residents in the State being 8 and 52.9, respectively. Florida would thus appear to be on the periphery of the area of endemic histoplasmosis in the United States.

1264. DYSON (J. E.) & EVANS (E. E.). **Skin test antigens from yeast phase cultures of *Blastomyces dermatitidis* and *Histoplasma capsulatum*.**—*Univ. Mich. med. Bull.*, 20, 3, pp. 53–61, 1954.

In this preliminary investigation in the Department of Bacteriology, University of Michigan Medical School, Ann Arbor, an attempt was made to

obtain skin test antigens from yeast phase cells of *Histoplasma capsulatum* and *Blastomyces dermatitidis* which lacked the undesirable cross-reactivity seen in mycelial antigens. Fractions isolated by ethanol precipitation from the supernatant fluids of both organisms appeared to be both specific and sensitive within a certain weight range. The partially purified antigens appeared to be largely composed of polysaccharide.

1265. SHAPIRO (J. L.), LUX (J. J.), & SPROFKIN (B. E.). **Histoplasmosis of the central nervous system.**—*Amer. J. Path.*, 31, 2, pp. 319–335, 11 figs., 1955.

Reports of six cases of histoplasmosis (*Histoplasma capsulatum*) of the central nervous system, found during the post-mortem examinations of the brains of 11 patients who had died of histoplasmosis, are given from the School of Medicine, Vanderbilt University, Nashville 5, Tennessee. The infections can be classified into three groups, miliary granulomas, focal destructive lesions of the brain parenchyma, and meningitis, thus emphasizing their similarity to those of tuberculosis of the central nervous system. The possibility of involvement of the central nervous system should be considered in every case of histoplasmosis.

1266. SPITZ (L. J.) & SCHWARTZ (B.). **Histoplasmosis in non-endemic regions.**—*Amer. J. Med.*, 15, 5, pp. 624–632, 6 figs., 1953.

Evidence is presented from a study of 37 cases of histoplasmosis (*Histoplasma capsulatum*) at the Pulmonary Clinic of the Veterans Administration Regional Office, Brooklyn, New York, that the disease is a common cause of lung involvement in non-endemic, as well as in endemic areas of the United States [cf. next entry]. Roentgenographically, histoplasmosis may simulate many forms of pulmonary disease, necessitating the performance of routine tuberculin, histoplasmin, and coccidioidin tests for correct diagnosis. In 19 cases of the present series the histoplasmin test was positive and the other two negative, while in 18 both histoplasmin and tuberculin were positive and coccidioidin negative.

1267. SHULL (H. J.). **Human histoplasmosis : a disease with protean manifestations often with digestive system involvement.**—*Gastroenterology*, 25, 4, pp. 582–595, 10 figs., 1953.

Histoplasmosis (*Histoplasma capsulatum*) is alleged to be more common than was formerly supposed [cf. preceding entry]. The digestive organs, especially the small and large intestines and liver, are frequently found at autopsy to be involved in the disseminated form of the disease. Occasionally the digestive symptoms may be so severe and the course of the illness of such a nature as to confuse the usual picture of the disease, resulting in misinterpretation of the gastro-intestinal lesions. Two such cases, both fatal, are described from the Vanderbilt University School of Medicine, Nashville, Tennessee, one in a 31-year-old male and the other in a 49-year-old female. Examination with the sigmoidoscope is essential where bowel involvement is suspected. A third case, illustrating the localized form of infection, involved the oropharyngeal region in a 48-year-old male native of Oklahoma, who recovered under treatment with a sulphonamide and testosterone.

Of the 419 cases of histoplasmosis hitherto recorded at the Vanderbilt University Hospital, 375 have been of the minimal, benign type, seven of the localized, and 37 of the disseminated. The five survivors in the last-named group, all infants, were treated with ethyl vanillate [1, No. 2142], but at least nine other patients, including three adults, failed to benefit from this mode of therapy.

1268. SORENSEN (L. J.) & EVANS (E. E.). **Antigenic fractions specific for *Histoplasma capsulatum* in the complement fixation reaction.**—*Proc. Soc. exp. Biol., N.Y.*, 87, 2, pp. 339–341, 1954.

A method is described from the Department of Bacteriology, University of Michigan, for the isolation of antigens from the supernates of fluid yeast-phase cultures of *Histoplasma capsulatum* by precipitation with zinc and alcohol accompanied by removal of protein by the water-chloroform technique. Antigens thus prepared fixed complement only with sera from rabbits infected by the same fungus.

1269. OLIVER (R. K.), HOLDING (B. F.), HENRY (R. C.), & PENTON (S.). **Histoplasmosis. A Roentgenographic survey of some Alabama counties. Report of two cases with pulmonary cavitation.**—*J. med. Ass. Al.*, 24, 5, pp. 113–121, 8 figs., 1 map, 1954.

Following an introductory résumé of information on the pathology, epidemiology, diagnosis, and therapy of histoplasmosis (*Histoplasma capsulatum*), some of the findings gathered from a survey of the disease in Alabama are presented. Of 29,229 chest Roentgenograms from 44 counties, 65 were compatible with benign pulmonary calcification of the so-called miliary type, probably caused by the fungus. Two cases of pulmonary cavitation due to *H. capsulatum*, in males aged 27 and 57, are reported from the Montgomery Tuberculosis Sanatorium, of whom the former was apparently cured by lobectomy, while the latter succumbed to a massive haemorrhage 16 days after the same operation.

1270. IBACH (MARTHA J.), LARSH (H. W.), & FURCOLOW (M. L.). **Epidemic histoplasmosis and airborne *Histoplasma capsulatum*.**—*Proc. Soc. Exp. Biol. & Med.*, 85, 1, pp. 72–74, 1954.

The isolation of *Histoplasma capsulatum* on five occasions from the air of two chicken houses is reported from the University of Kansas Medical Center. There had been cases of histoplasmosis following the cleaning of these chicken houses. The air was sampled by Venturi samplers using distilled water as the scrubbing fluid and concentrating the organisms from it on millipore filters. The sediment from the filter pads was inoculated into mice which were given antibiotic protection from other organisms. The mice were killed after four weeks, and cultures from the macerated liver, spleen, and adrenals of each mouse were used to identify the fungus.

1271. MENGES (R. W.), FURCOLOW (M. L.), & HABERMANN (R. T.). **An outbreak of histoplasmosis involving animals and Man.**—*Amer. J. vet. Res.*, 15, 57, pp. 520–524, 6 figs., 1954.

A description is given of an outbreak of histoplasmosis (*Histoplasma capsulatum*) in five members of a family on a farm in Kansas [2, No. 1029], all of whom reacted positively to histoplasmin skin tests and to serological tests. The fungus was isolated from all the five farm dogs examined and from one out of the four cats, while two out of three chickens were positive histoplasmin reactors. Skin tests were also performed on 161 animals within a two-mile radius of the farm, with positive results in nine (6 per cent.).

1272. PAYNE (N. S.), HENNIGAR (G. R.), & SUTTON (L. E.). **Histoplasmosis occurrence in Virginia.**—*Virginia med. (Semi-)Mon.*, 79, 8, pp. 430–435, 1952. [Received 1955.]

A case of histoplasmosis (*Histoplasma capsulatum*) in a five-year-old boy with positive autopsy findings is reported from the Medical College of Virginia Hospital.

1273. SNOKE (P. O.) & HEID (G. J.). **Oral histoplasmosis : report of case.**—*J. oral Surg.*, 11, 3, pp. 241–242, 1953.

An account is given of a case of oral histoplasmosis (*Histoplasma capsulatum*) [1, No. 2278] in Pennsylvania with marked tumorization cured by electro-desiccation, the oral administration of potassium iodide, and intravenous injections of neoarsphenamine [1, No. 746].

1274. PINE (L.). **Studies on the growth of *Histoplasma capsulatum*. I. Growth of the yeast phase in liquid media.**—*J. Bact.*, 68, 6, pp. 671–679, 3 graphs, 1954.

In studies on the growth of the yeast phase of *Histoplasma capsulatum* [1, No. 1928] in liquid media at the National Microbiological Institute, National Institutes of Health, Bethesda, Maryland, the maximum rate was attained in a medium containing glucose, cysteine, and aspartic and glutamic acids. Oxygen, carbon dioxide, oleic acid, and apparently –SH groups are also required. Growth in test-tubes may be inhibited by the concentrations of fatty acids derived from cotton stoppers but this is reversed by the addition of starch and bovine albumin.

1275. CHARR (R.). **Clinical histoplasmosis in Pennsylvania.**—*Penn. med. J.*, 56, 7, pp. 548–552, 1 fig., 1953.

Descriptions are given of two cases of clinical histoplasmosis (*Histoplasma capsulatum*) treated at the Jefferson Medical College and Philadelphia Tuberculosis and Health Association, Pennsylvania. The first case was that of a 48-year-old Greek merchant, resident in the United States since 1924. In 1942, a small, tender area developed on the left side of the palate. This was incised. It drained for a few days and then healed. Subsequently the patient returned occasionally, complaining of a 'chest cold'. In March, 1949, a painful swelling developed on the left side of the soft palate. This was incised, but the lesion gradually enlarged and death ensued in 1952. Biopsy studies showed the presence of characteristic bodies of *H. capsulatum* within the cytoplasm of the reticulo-endothelial cells.

The second case was that of a 62-year-old house-painter, admitted to hospital on 3rd November, 1950, with difficulty in swallowing, cough, and chest wheezing of eight weeks' duration. A growth developed on the right side of the vocal chord, and characteristic bodies of *H. capsulatum* were detected within the cytoplasm of the cells in granulomatous tissue. Histoplasmin tests were negative but the organism was found in tissue from the vestibule of the nose and in the liver through biopsy. On 15th February, 1951, the patient died.

It is concluded that where the presence of histoplasmosis is suspected, reliance cannot be placed on the histoplasmin skin or complement-fixation tests. The disease can be diagnosed tentatively by clinical and pathological features and definitely by the identification of the organism. Histoplasmosis is probably more prevalent than the reports indicate. The presence of the organism in the soil, rivers, dogs, and rodents presents an alarming public health problem.

1276. BURTON (C. T.) & WALLENBORN (P. A.). **Histoplasmosis of the larynx.**—*Virginia med. (Semi-)Mon.*, 80, 12, pp. 665–668, 1 fig., 1953.

Information on the history, the benign and disseminated types, diagnosis, and treatment of histoplasmosis (*Histoplasma capsulatum*) is summarized, and a case involving the larynx in a 46-year-old schoolmaster reported from the Veterans Administration Hospital, Roanoke, Virginia. An apparent remission in the dissemination of the fungus was induced by an intensive course of ethyl vanillate therapy and topical treatment of the epiglottitis with propamidine and varidase.

1277. MANKIEWICZ (EDITH), BLANK (F.), & RUBIN (J. H.). **Pulmonary histoplasmosis with cavitation.**—*Canad. med. Ass. J.*, 71, pp. 386–387, 1954.

From the Royal Edward Laurentian Hospital, Montreal, a case of pulmonary histoplasmosis in a white male of 31 years is reported. Radiography revealed extensive bilateral pulmonary disease suggestive of tuberculosis. Five attempts to culture *Mycobacterium tuberculosis* were unsuccessful but *Histoplasma capsulatum* was isolated from the sputum on two occasions.

1278. BALL (J. D.) & EVANS (P. R.). **Histoplasmin sensitivity in Uganda.**—*Brit. med. J.*, 1954, pp. 848–849, 1 diag., 1954.

In tests with histoplasmin carried out intradermally on 175 Africans (76 men, 69 women, and 30 children) at the Makerere College Medical School, Uganda, 11 gave positive reactions (8 men, two women, and one child). X-rays of ten of these showed that six had pulmonary calcification and of these, one had active tuberculosis and the other five had positive tuberculin skin tests. A case of possible histoplasmosis was encountered in an African student, who went to the United States, where skin tests for histoplasmosis and coccidioidomycosis were negative in 1953 but at a later date the histoplasmin skin test was weakly positive. He had pulmonary calcification but was free from tubercle bacilli.

1279. MERVEILLE (P.), AUDEBAUD (G.), & CECCALDI (J.). **L'histoplasmosse existe-t-elle en A.E.F.?** [Does histoplasmosis exist in A.E.F.?]—*Bull. Soc. Pat. exot.*, 47, 4, pp. 566–572, 1954.

Of 166 natives of Tchad and 171 from the Central Congo tested with histoplasmin at the Institut Pasteur, Brazzaville, French Equatorial Africa, 13 (7·8 per cent.) and 17 (9·9), respectively, reacted positively. Radiographs revealed no sign of lung calcification, indicating that the portal of entry for *Histoplasma capsulatum* in these subjects tends to be cutaneous or mucous rather than pulmonary, possibly representing a specialized 'African' form of the disease. Histoplasmosis is thought to be more prevalent in Africa than has hitherto been supposed.

1280. MICHAEL (M.) & VOGEL (R. A.). **Histoplasmosis. Report of a case, with observations on management.**—*New Engl. J. Med.*, 251, 22, pp. 884–887, 3 figs., 1954.

A case of pulmonary histoplasmosis (*Histoplasma capsulatum*) in a 28-year-old man, in which the fungus was isolated from the bone marrow, blood stream, and throat, is described from the Veterans' Administration Hospital and the Emory University School of Medicine, Atlanta, Georgia. The patient showed an infrequently recognized syndrome, a diffuse, pulmonary infiltration with ensuing capillary alveolar block. Cortisone, which had been administered before the diagnosis of histoplasmosis was certain, was discontinued on confirmation of this disease because of its recognized deleterious effect on a variety of infectious processes; but the authors consider that the drug contributed greatly to the clearing of the acute pulmonary lesions.

1281. STOTT (H.). **Histoplasmin sensitivity and pulmonary calcification in Kenya.**—*Brit. med. J.*, 1954, pp. 22–25, 1954.

Of 833 adult African males examined in Kenya, 72 (8·6 per cent.) gave positive histoplasmin skin test results; 274 were tested with tuberculin at the same time, and it was found that 15·6 per cent. of the tuberculin-positive group were histoplasmin positive, whilst only 4·2 per cent. of the tuberculin negative group were histoplasmin positive. Chest X-rays of 130 of these cases showed

that pulmonary calcification in the histoplasmin positive-tuberculin positive group was four times as common as in the histoplasmin negative-tuberculin positive group.

1282. VAN UDEN (N.), RÉ (L.), & FERREIRA (A. DOS S.). **Preliminary study on histoplasmin sensitivity in Portuguese Africa, Goa and Macau.**—*An. Inst. Med. trop. Lisboa*, 12, 1-2, pp. 65-73, 1955. [French, German, and Portuguese summaries.]

Earlier investigations having demonstrated that histoplasmin sensitivity does not occur in Portugal [2, No. 783], subjects from Portuguese Africa, Goa, and Macau and resident in Portugal at the time were also tested. Of 25 subjects from Angola there were two positive reactors, both 21-year-old males that had spent 17 and 7 years, respectively, in Luanda, but there were none among 22 from Mozambique, seven from Portuguese Guinea, ten from Capo Verde, 12 from Goa, and five from Macau. Current knowledge of histoplasmosis and histoplasmin sensitivity in Africa, India, and the Macau-Hong Kong area is discussed.

1283. DUBOIS (A.) & JANSSENS (P. G.). **Mycose ganglionnaire chez un Européen au Congo. Communication préliminaire.** [Glandular mycosis in a European in the Congo. Preliminary communication.]—*Schweiz. Z. allg. Path.*, 16, 3, pp. 504-505, 1953.

This paper, communicated to the Fourth Conference of the International Society of Geographical Pathology, held at Liège in July, 1952, gives a brief, preliminary account of the first case in a white patient from the Belgian Congo of a glandular mycosis. In a footnote it is stated that after this paper had been presented the condition was ascertained to be due to a new strain of *Histoplasma duboisii* [2, No. 795].

1284. VANBREUSEGHEM (R.), DUBOIS (A.), BRUTSAERT (P.), & JANSSENS (P. G.). **Transmissibilité au Cobaye d'*Histoplasma duboisii* à partir de la forme parasitaire humaine.** [Transmissibility to the Guinea-pig of *Histoplasma duboisii* from the parasitic human form.]—*Ann. Soc. belg. Méd. trop.*, 33, 2, pp. 171-175, 6 pl., 1953. [Flemish summary.]

At the Institute of Tropical Medicine, Antwerp, *Histoplasma duboisii* [see preceding entry] from human pus was successfully inoculated into guinea-pigs by the intratesticular route. Subsequent development of the disease was slower than that resulting from inoculation by cultures. *Capsulatum* forms were not observed, though this form regularly precedes the appearance of the *duboisii* form when the inoculations are made from cultures.

1285. CLAESSENS (H.) & HAVEN (F.). **Over het bestaan van coccidioidomycosis en histoplasmosis in Belgisch Congo.** [On the existence of coccidioidomycosis and histoplasmosis in the Belgian Congo.]—*Ann. Soc. belge Méd. trop.*, 34, 6, pp. 831-839, 1954. [French summary.]

Of 778 natives of Masi Manimba (Kwango), Belgian Congo, tested with 1 per cent. coccidioidin, 54 (6.9 per cent.) reacted positively [2, Nos. 509, 510], the corresponding figures for histoplasmin tests on 690 being 123 (17.8) [2, No. 793].

1286. EARLE (A. M.) & BRENNEMAN (F. S.). **Histoplasmin sensitivity in American Samoa.**—*Amer. J. trop. Med.*, 3, 6, pp. 1055-1056, 1954.

Of 1,567 schoolchildren and students aged from seven to 20 years tested for sensitivity to histoplasmin in American Samoa, 14 (0.9 per cent.) reacted

positively. Three of the nine females, aged 17, 18, and 19 years, were also positive for tuberculin.

1287. VIDAL (J.), BERTRAND (L.), RIOUX (J.), & GUIN (J. J.). **Résultats de tests cutanés à l'histoplasmine pratiqués systématiquement chez 162 tuberculeux pulmonaires.** [Results of skin histoplasmin tests systematically performed on 162 patients with pulmonary tuberculosis.]—*Montpellier méd.*, 41-42, 5, pp. 470-472, 1952. [Received 1955.]

In view of the frequency of pulmonary involvement in cases of histoplasmosis [*Histoplasma capsulatum*], the authors made an investigation of histoplasmin allergy in pulmonary tuberculosis, in which 162 patients at the Sanatorium Bon Accueil and the Departmental Centre of Pthisiology, Montpellier, France (of whom 19 came originally from Russia but had lived elsewhere for 30 years, first in China, and later in the Philippine Islands), were given an intradermal injection of histoplasmin at 1 in 1,000. A further injection, at 1 in 100, was given in doubtful cases. The results obtained 15 and 30 minutes and 24 hours later were all negative. In parallel tests a search was made for *Candida* spp. in the sputa of 106 of the patients, and 44 results were positive.

The authors conclude that their patients were not suffering from histoplasmosis, and there is no relation between histoplasmosis and *Candida* infection.

1288. SCLAFFER (J.) & DROUHET (VICTORIA). **Recherches sur l'allergie cutanée à l'histoplasmine chez des enfants de la région parisienne.** [Studies on cutaneous allergy to histoplasmin among children of the Parisian region.]—*Sem. Hôp., Paris*, 30, 25, pp. 1575-1577, 1954.

Following a review of the available information on the geographical distribution of histoplasmosis (*Histoplasma capsulatum*), the authors briefly report on the intradermal application of the histoplasmin test to 283 Parisian children up to 14 years of age. In 274 the reactions were negative and in the remaining nine doubtful [cf. 2, No. 2130]. Further laboratory tests on the three presenting symptoms suggestive of the disease gave negative results. Seven of the nine doubtful reactors gave a strong response to levurin [extract from *Candida albicans*: cf. below, No. 1314] but the coccidioidin test was uniformly negative.

1289. SCHMIDT (B.). **Über einen Fall von Histoplasmose bei einem früheren amerikanischen Kriegsgefangenen.** [On a case of histoplasmosis in an ex-American prisoner of war.]—*Medizinische* (formerly *Med. Welt*), 2, 42, pp. 1419-1420, 1 fig., 1954.

The author reports the incidental finding of numerous calcifications in both lungs of a 27-year-old ex-prisoner of war in the United States who underwent a nasal operation at the Karl-Olga Hospital, Stuttgart, Germany. In 1945 he and 50 other men working in the 'bush' in Arkansas contracted an illness manifested by fever and a purulent skin eruption, presumed to have been histoplasmosis (*Histoplasma capsulatum*), from which he recovered after six to eight weeks. The patient reacted strongly to a histoplasmin test at the time of the operation.

1290. HEDENIUS (P.) & FRISK (Å.). **Cutaneous testing with fungus antigens. A study of the reaction to histoplasmin, oidiomycin and trichophytin in a medium sample of the Swedish population.**—*Acta derm.-venereol., Stockh.*, 35, 1, pp. 31-36, 1955. [French, German, and Spanish summaries.]

Since 1949 histoplasmin skin tests have been performed on 1,000 hospital

patients in central Sweden, of whom only seven (0.7 per cent.) reacted positively; one of these had previously resided in the United States and another in South America. Four of the other reactors had a certain allergic background and at least two were also strongly positive to oidiomycin (from *Candida albicans*). It is considered highly improbable that histoplasmosis (*Histoplasma capsulatum*) exists in the region surveyed. Of 700 tests with oidiomycin and trichophytin, 288 and 90 (41.1 and 12.9 per cent.), respectively, were positive.

1291. MENGES (R. W.). **Histoplasmin sensitivity in animals.**—*Cornell Vet.*, 44, 1, pp. 21–31, 2 graphs, 1 map, 1954.

Histoplasmin sensitivity rates are presented for various domestic animals skin-tested in Kansas, Missouri, and Iowa. In general, the evidence indicates that histoplasmosis (*Histoplasma capsulatum*) is a widespread disease in these areas. Thus, among 2,752 cattle in the three States there were 150 (5 per cent.) positive reactors. In Missouri 32 of 44 horses (73 per cent.) reacted positively, the corresponding figures for 279 sheep being 92 (33), for 129 swine two (one), and for 98 chickens one (one). Of the 102 dogs tested in Kansas and Missouri, 14 (14 per cent.) were positive reactors. As in other animals, and also in man, the rates increased with age (from 9 per cent. under four years to 23 per cent. in the group of eight years and upwards). The disease does not appear to be transmitted from animals to man, the evidence pointing rather to the existence of a reservoir of the fungus in the soil which acts as a common source of infection by air-borne spores [2, No. 788]. Inoculation experiments with spores of *H. capsulatum* on mice and hamsters gave negative results.

1292. SALVIN (S. B.), with the technical assistance of CORY (J. C.) & NISHIO (JANE). **Further studies on immunization of mice against *Histoplasma capsulatum*.**—*Amer. J. Hyg.*, 61, 1, pp. 72–81, 1 fig., 2 graphs, 1955.

At the National Microbiological Institute, Rocky Mountain Laboratory, Hamilton, Montana, male Swiss mice immunized with acetone-dried cells of the yeast phase of *Histoplasma capsulatum* [2, No. 790] developed less infection of the spleen, liver, and kidney tissue than did the untreated controls, the difference between the two groups being most conspicuous during the first three weeks after challenge. In non-immunized mice the fungus grew very rapidly during the first hours and its rate of development then gradually decreased during the next few months. In some of the controls the organism was still present in the spleen four to five months after an intraperitoneal challenge of 10^6 cells. Immunization was relative in so far as it tended merely to reduce the number of cells in various tissues, but it apparently sufficed to prevent death from a lethal intracerebral challenge.

1293. AJELLO (L.) & RUNYON (L. C.). **Infection of Mice with single spores of *Histoplasma capsulatum*.**—*J. Bact.*, 66, 1, pp. 34–40, 1 fig., 1953.

At the Communicable Disease Center, United States Public Health Service, Atlanta, Georgia, mice proved to be highly susceptible to intraperitoneal inoculation with single spores of *Histoplasma capsulatum* [2, No. 790] taken from an isolate from soil specimens collected in Williamson County, Tennessee. The fungus was recovered in a high percentage of tubes inoculated with liver, spleen, and adrenal glands, the rate of recovery being correlated directly with the interval between inoculation and sacrifice of the animal and, when larger amounts of inoculum were used, with the inoculum size. The larger the inocula, the higher was the recovery rate in shorter time intervals, though nearly 100 per cent. of the cultures were positive at the end of eight weeks.

1294. EMMONS (C. W.), ROWLEY (D. A.), OLSON (B. J.), MATTERN (C. F. T.), BELL (J. A.), POWELL (E.), & MARCEY (E. A.). **Histoplasmosis. Proved occurrence of inapparent infection in dogs, cats and other animals.**—*Amer. J. Hyg.*, 61, 1, pp. 40–44, 1955.

In investigations at Loudoun County, Virginia, during a course of eight years on the natural occurrence of *Histoplasma capsulatum* [2, No. 788] in soil and animal hosts 4,664 animals were killed and examined by culture for evidence of histoplasmosis. The fungus was isolated from tissues of 145 out of 397 dogs, 81 out of 449 cats, 75 out of 2,149 rats, 3 out of 95 opossums, 2 out of 18 skunks (*Mephitis mephitis*), 1 out of 988 house mice, 1 out of 30 foxes, and 1 out of 37 woodchucks (*Marmota monax*).

The animals, on the whole, did not have clinically apparent histoplasmosis. The dog and cat were found to be useful indices of the geographical distribution of *H. capsulatum*, which was repeatedly isolated from soil on five farm premises.

1295. DIETRICHSON (EDEL). **Étude d'une collection norvégienne de levures (2^e partie).** [Study on a Norwegian yeast collection (2nd part).]—*Ann. Parasit. hum. comp.*, 29, 3, pp. 271–288; 4, pp. 460–498, 35 figs., 1954.

This further list of Norwegian yeasts [cf. 1, No. 1705], obtained from sputum, blood, and skin scrapings of patients suffering from 12 different diseases in Norway, comprises notes on *Candida aaseri* n.sp., *C. guilliermondii*, *C. krusei*, *C. langeroni* n.sp., *C. melibiosi*, *C. mycoderma* and its var. *annulata* n.var., *C. parapsilosis* and its var. *obtusa* n.var., *C. rugosa* and its var. *elegans* n.var., *C. trigonopoides* n.sp., *C. zeylanoides* var. *norvegensis* n.var., *Debaryomyces klockeri*, *Hansenula anomala*, *H. subpelliculosa*, *H. amylofaciens* n.sp., *Pichia dubia* n.sp., *P. farinosa*, *Saccharomyces cerevisiae*, *S. chevalieri* var. *atypica* n.var., *S. fragilis*, *S. marxianus*, *S. rouxii* var. *polymorphus*, *S. scandinavicus* n.sp., *S. veronae* var. *osloensis* n.var., *S. verticillatus* n.sp., *S. vossii* n.sp., *Torulopsis glabrata*, *T. inconspicua* and its var. *filiforme* n.var., *T. osloensis* n.sp., *T. sphaerica*, *Trichosporon capitatum*, and *T. cutaneum*.

1296. MORQUER (R.), PUGET (E.), & BAZEX (A.). **Une nouvelle levure pathogène, *Candida pseudotumoralis*. Étude systématique et physiologique.** [A new pathogenic yeast, *Candida pseudotumoralis*. A systematic and physiological study.]—*Rev. Mycol.*, 19, 1, pp. 63–84, 4 figs., 1954.

In work conducted at the National Veterinary School, Toulouse, France, the authors isolated from a fatal case of pseudotumoral blastomycosis in a sheep-dog a yeast parasitizing the subcutaneous connective tissue. The animal died in May, 1951. Autopsy revealed the presence of moriform tumours in the connective tissue of different parts of the body, while the lymphatic system and the glands were also affected. Histological examination showed that the pseudotumours consisted of fibrous formations surrounding round or oval loculi 800 to 1,000 μ in diameter, packed with yeast-cells and chlamydospores, the former ovoid, thin-walled cells measuring 2 to 3 by 2 to 2.5 μ and the latter spherical or ovoid cyst-like bodies, 3.7 to 10.5 μ in diameter, the largest having a double wall. The exospore (1.2 μ) was up to three times as thick as the endospore (0.4 μ). The fungus was identified as a species of *Candida*. In culture it developed, in liquid malt at 25° C., ovoid or ovoid-spherical, actively budding cells measuring 4.2 to 7.2 by 5 to 8.2 (occasionally 9) μ , formed pseudo-mycelium, which developed tardily, and gave rise to simple, regular verticils of blastospores, chlamydospores being produced on exhausted media. It is regarded as a new species, and is named *C. pseudotumoralis* n.sp.

1297. NICKERSON (W. J.). **An enzymatic locus participating in cellular division of a yeast.**—*J. gen. Physiol.*, 37, 4, pp. 483–494, 2 pl., 1954.

At the Department of Microbiology, Rutgers University, New Jersey, growing cells of a filamentous mutant of *Candida albicans* accumulated and reduced tetrazolium dyes, whereas cells of the parent strain, developing as a normally budding yeast, accumulated but did not reduce the dyes. In older cultures, in which rapidly oxidizable carbohydrate has been depleted, the parent strain typically produces tetrazolium-reducing filaments. The mutant synthesizes cell mass almost as rapidly as the parent strain and is indistinguishable from the latter in fermentative ability, nutritional growth requirements, rate of endogenous respiration, and polysaccharide composition. These facts, together with the marked differences in tetrazolium reduction, lead to the conclusion that the mutant has an impairment to a cellular oxidation mechanism as a flavoprotein locus where a reaction essential for cellular division is linked by way of an oxidation-reduction to cellular metabolism. Preliminary evidence is presented indicating that uncoupling of cellular division (by genetic block) in the mutant or in the parent (by substrate exhaustion) results from impairment to a dissociable metal chelate mechanism which normally unites a reaction essential to cellular division with flavoprotein oxidation.

1298. O'BRIEN (J. P.). **Experimental miliaria. An instance with Staphylococci and Candida in the lesions.**—*J. invest. Derm.*, 24, 2, pp. 115–124, 10 figs., 1955.

At the Department of Pathology, University of Sydney, Australia, it has been found possible to induce experimental miliaria in the normal parts of the skin of patients already suffering from the disease, by keeping a surface of nutrient agar closely pressed to the normal skin for several days. No such reaction is produced when the agar contains a bacteriostatic substance. As well as the *Staphylococci* found in the pores of the experimental lesions, a yeast considered to be *Candida albicans* was sometimes present as well, but only inside the pores. Several questions as to the normal position of *C. albicans* in the skin, and the effect on the yeast of a disturbed host-parasite relationship, are raised.

1299. POSPISIL (L.). **Zur Serologie der mykotischen Erkrankungen. I. Komplementbindungsreaktion bei Moniliasis.** [On the serology of mycotic diseases. I. Complement-fixation reaction in moniliasis.]—*Zbl. Bakt. (Orig.)*, Abt. 1, 161, 4–5, pp. 311–314, 1954. [English, French, and Russian summaries.]

At the Clinical Hospital, Brno, Czechoslovakia, the antigenic relationship of *Candida albicans* to three saccharomycetes (the wine, beer, and press yeasts) was determined. Anti-*C. albicans* sera reacted only with the homologous antigen. Of 300 healthy blood-donors subjected to a complement-fixation test, only five (1.66 per cent.) were provided with antibodies against the fungus at a maximum dilution of 1 in 8.

1300. THJØTTA (T.) & TORHEIM (B. J.). **Studies on the fermentation of sugars in the Candida group.**—*Acta path. microbiol. scand.*, 36, 3, pp. 237–249, 1955.

From the Wilhelmsen Bacteriological Institute, Oslo, Norway, the authors contribute a fully tabulated study and discussion of the fermentation reactions of 58 strains of *Candida*, comprising 42 of *C. albicans*, two each of *C. pseudotropicalis*, *C. guilliermondii*, *C. macedoniensis*, *C. zeylanoides*, *C. pelliculosa*, *C. lipolytica*, *C. tropicalis*, *C. utilis*, *C. intermedia*, *C. robusta*, and *C. stellatoidea*, in a basal medium (a) without carbohydrate (control) and (b) with the addition of 2 per cent. lactose, maltose, glucose, saccharose, or glucose,

incubated for 10 days at 27° C. The results were recorded by means of measurements made with a pH meter. The data thus obtained are considered to be sufficiently reliable for purposes of classification.

1301. VIEU (J.-F.). **Intérêt de certains antibiotiques fungiques pour l'isolement rapide des levures pathogènes chez l'Homme.** [Value of certain fungal antibiotics for the rapid isolation of yeasts pathogenic to Man.].—*Ann. Inst. Pasteur*, 88, 2, pp. 250–253, 1955.

Excellent results are reported in the rapid isolation of *Candida* spp. from skin lesions, pus, sputum, faeces, and urine by the addition to 2 per cent. Sabouraud's agar of neomycin [2, No. 563] and soframycin at a concentration of 0.5 ml. per 10 ml. and chloramphenicol at 1 ml.

1302. BARTELS (H. A.) & BUCHBINDER (M.). **Yeastlike microorganisms isolated from root canals.**—*Oral Surg.*, 7, 1, pp. 98–102, 1954.

Isolations made from a series of 100 root canals, examined in New York, on to Littman's agar, gave rise to yeast cultures in 18 cases. Of these, ten were *Candida albicans*, one was *C. mortifera*, one *C. guilliermondii*, two *C. krusei*, two unidentified *Candida* strains, and two were strains of *Cryptococcus*, group 1. Bacteria always accompanied the yeasts, and in several instances two yeast strains were isolated from the same root canal. A brief description is given of the case of a woman undergoing root canal therapy, where pain and swelling of the gingivae occurred persistently when the canal was treated with antibiotics, but was promptly relieved by treatment with formocresol and monochlorophenol. *C. albicans* was isolated from this tooth. Special care in the cleaning of root canals is recommended when yeasts are present, and it is suggested that one of the above compounds or sodium caprylate should be incorporated in any dressings used.

1303. BRANDT (U.). **Le granulome malin est-il une endomykose?** [Is malignant granuloma an endomycosis?].—*Acta otolaryng.*, Stockh., 44, 2, pp. 139–153, 6 figs., 1954. [English and Spanish summaries.]

Two fatal cases of malignant granuloma attributed to *Monilia* [*Candida*] *albicans*, both in women, one 57 and the other 64, are reported from the Södersjukhus, Stockholm, Sweden. The pharyngeal and nasal lesions were typical of the fungus, which occurred profusely and regularly in the pseudomembranes and ulcerations. Direct spread took place by way of the blood stream from the primary sites of infection to the larynx, bronchi, and internal organs, from which the organism was cultured. Other features characteristic of moniliasis were the formation of granulation tissue without neoplastic or specific signs either in the primary foci or metasized organs; cutaneous manifestations; development of a septic condition without the usual indications of bacterial infection; and complete failure, or even a deleterious effect, of antibiotic and chemotherapeutic therapy. Under these circumstances the diagnostic value of intracutaneous, agglutination, and complement-fixation tests would appear to be very limited.

1304. FAZIO (M.), MINETTO (E.), & ODDONE (I.). **La bronchomoniliase existe-t-elle?** [Does bronchomoniliasis exist?].—*Ann. Otolaryngol.*, 71, 8–9, pp. 666–675, 8 figs., 1954.

At the Institute of Medical Pathology, Turin, Italy, the authors isolated *Candida albicans* from the sputum or bronchial secretions in 20 per cent. of 270 cases of pulmonary disease. One case presenting the symptoms generally attributed to bronchomoniliasis is fully reported and discussed in relation to

the problems of etiology and antibiotic therapy. From a consideration of all the evidence it is concluded that bronchopulmonary mycoses normally occur as sequels to an infectious pulmonary disease, the pathogenicity of the fungus being very doubtful.

1305. EVANS (W. E. D.) & WINNER (H. I.). **The histogenesis of the lesions in experimental moniliasis in rabbits.**—*J. Path. Bact.*, 67, 2, pp. 531–535, 12 figs., 1954.

At Charing Cross Hospital Medical School rabbits were inoculated with 10,000,000 to 20,000,000 organisms of a strain of *Candida albicans*. Some were killed at six, 24, 48, and 72 hours, while most of the others died between the fourth and seventh days. Post-mortem examinations were performed immediately and tissues were fixed in Zinker's fluid. Duplicate sections were prepared by the periodic acid-Schiff technique and haematoxylin-eosin. Lesions could be identified by P.A.S. before they were visible on haematoxylin and eosin-stained sections. At 24 hours the organism was seen budding and forming mycelium, with a polymorph reaction and tissue necrosis, followed by abscess formation throughout the body. In the kidney, yeasts are first seen in the glomerular and intertubular capillaries. At 24 hours most of the mycelium is seen in the cortical tubules, but at 48 hours hyaline thickening of the basement membrane of some glomerular capillaries develops. The hyaline material gives a positive P.A.S. reaction, and ultimately causes obliteration of the affected capillary loops.

1306. KOSTIĆ (P.). **Značaj *Monilia albicans* u oboljenjima urogenitalnog aparata žene.** [The importance of *Monilia albicans* in diseases of the urinogenital apparatus of women.]—*Srpski Arhiv. tselok. Lek.*, 81, 4, pp. 354–366, 1953.

Monila [*Candida*] *albicans* was isolated from the urinogenital apparatus of 197 out of 2,440 women patients examined at the Gynaecological and Maternity Clinic, Faculty of Medicine, Belgrade, Yugoslavia, from 1947 to 1953. Treatment with 1 to 5 per cent. aqueous solution of gentian violet and in severe cases with 5 per cent. alcoholic solution of gentian violet is recommended. A weak tincture of iodine solution may also be applied.

1307. HENRIKSEN (E.), MARTINS (S. M.), WILSON (J. W.), & YEAMAN (A.). **Vaginitis, due to *Candida* (moniliasis), treated with a benzothiazole derivative.**—*Amer. J. Obst.*, 68, 3, pp. 830–834, 1954.

Sixty-five women patients, 33 per cent. of whom were pregnant, suffering from vaginal moniliasis caused by *Candida albicans* in 64 cases and by *C. krusei* in one, were treated at the University of South Carolina School of Medicine with intravaginal asterol dihydrochloride. Within two to six weeks 83.1 per cent. became asymptomatic, 6.2 per cent. sustained a recurrence of symptoms shortly after treatment, and 10.7 per cent. were not benefited. In from two to five months 29.6 per cent. sustained a recurrence of vaginitis, the cause being *Candida* in four cases, *Trichomonas* in one, and undetermined in the others. Irritation was observed in 20 per cent. of the patients, but no toxicity was noted.

1308. CHRISTIE (R.) & MORTON (MARY M.). **The detection of *Candida albicans*.**—*Aust. J. Derm.*, 2, 2, pp. 87–93, 1953.

From St. Vincent's Hospital, Melbourne, a method of using guinea-pigs and white mice as substitutes for rabbits in the detection of pathogenicity in strains of *Candida albicans* is described. Agglutination of the fungus with an absorbed anti-serum by the slide method proved to be more reliable than any

of the other procedures tested, including fermentation reactions, formation of hyphae and chlamydospores in maize meal extract [2, Nos. 564, 567], and colony appearance on eosin-methylene blue agar, but it was not completely accurate.

1309. VOGEL (R. A.) & COLLINS (MARY E.). **Hemagglutination test for detection of *Candida albicans* antibodies in Rabbit antiserum.**—*Proc. Soc. exp. Biol., N. Y.*, 89, 1, pp. 138–140, 1955.

At the Medical Research Laboratories, Veterans Administration Hospital, Atlanta, Georgia, saline washings from yeast cells of *Candida albicans* yielded an active haemagglutinating substance, apparently not a protein. A *C. albicans* yeast-cell antigen cross reacted with *Saccharomyces cerevisiae* rabbit antiserum [1, Nos. 961, 962]. On the other hand, a *C. albicans* haemagglutinating antigen, equally effective in the homologous test, eliminated the cross-reaction with *S. cerevisiae* rabbit antiserum.

1310. KAIZAKI (I.). **Detection of *Candida* in the patients with pulmonary tuberculosis and a bacteriological study of the fungus. I. Detection of *Candida* in the patients with pulmonary tuberculosis.**—*Kekkaku*, 29, 7, p. 273, 1954. [English abstract.]

In studies at Seikoen National Sanatorium, Japan, the author attempted to isolate *Candida* from the sputum and faeces of healthy subjects and those suffering from tuberculosis [1, No. 2294]. The fungus was detected in 9 out of 63 healthy subjects (14.3 per cent.) and in 206 out of 633 (32.5 per cent.) with pulmonary tuberculosis. The latter figure was greater among older people but was not correlated with sex. It was detected in 46 out of 133 faeces samples (34.7 per cent.), sputum generally giving similar results. In general the chest lesions were larger, cavity formation more frequent, and clinical symptoms more marked when *Candida* was detected than when it was not. It was detected in 33.6 per cent. of patients treated with streptomycin and in 28.5 per cent. not treated, and was generally readily detectable in patients receiving P.A.S.

1311. McLEAN (MURIEL M.). **Chronic idiopathic hypoparathyroidism associated with moniliasis.**—*Arch. Dis. Childh.*, 29, 147, pp. 419–421, 3 figs., 1 graph, 1954.

A case of chronic idiopathic hyperthyroidism associated with *Candida albicans* in an 11-year-old girl is reported from the Royal Aberdeen Hospital for Sick Children, Aberdeen, to which she was admitted for the investigation of convulsions. Oral thrush and onychomycosis were also present. A general improvement followed the administration of A.T. 10 (dihydrotachysterol) and subsequently of 'calciferol', calcium lactate, and vitamin D to raise the abnormally low serum calcium level.

1312. WATRIN (J.), BEUREY (J.), & MOUGEOLLE (J.). **Les moniliasés cutanées.** [Cutaneous moniliasis.]—*Rev. méd. Nancy*, 79, 4, pp. 240–251, 1954.

This is a summary, based on 21 contributions to the relevant literature, of the available information on the clinical and anatomic-pathological features, etiology, diagnosis, and therapy of cutaneous moniliasis (*Candida* spp., principally *C. albicans*).

1313. LAMY (M.), AUSSANNAIRE (M.), JAMMET (Mlle M. L.), & CARAMANIAN (M.). **Un cas de mycose sous-cutanée à *Candida albicans*.** [A case of subcutaneous mycosis due to *Candida albicans*.]—*Arch. franç. pédiat.*, 10, 1, pp. 71–73, 1953.

Full clinical details are given of a case of a five-month-old female infant

admitted to the Hospital for Sick Children, Paris, in August, 1952, suffering from subcutaneous swellings in the right thigh and both arms, which had appeared during the previous week. In July an abscess developed in the left popliteal space and was incised, while boils forming on the scalp at the same time were treated with aureomycin ointment, and daily for six days 1,000,000 units of penicillin were administered intramuscularly and 0.5 gm. aureomycin *per os*. Puncture of the abscess in the thigh released a pus in which *Candida albicans* was present. Injections equivalent to 1 gm. sulphamide daily gave negative results, and the swelling was then treated with serum bicarbonate and Dakin's liquid. Local surgical treatment was applied to the arms, together with applications of various materials, and a daily dose of 0.25 gm. potassium iodide was given from 7th October. Cicatrization of the wounds in both arms was complete on the 15th, and the swelling in the thigh regressed. Subsequently, the general condition was reported to be excellent.

1314. SCLAFER (J.). **Un cas d'asthme à *Candida* (*Monilia*) *albicans*.**—*Sem. Hôp., Paris*, 30, 25, pp. 1555–1557, 1954.

A case of asthma which developed as an accompaniment to tubercular pleurisy in a 28-year-old female was attributed to the agency of *Candida albicans* [cf. 1, No. 2479] on the grounds of the very intensive reactions to levurin (extract of the fungus [cf. above, No. 1288]), aggravation of the symptoms in response to injection of the same extract at high concentrations, and their disappearance as a result of desensitization by low dosages.

1315. MEYER-ROHN (J.). **Moniliasis der Mundschleimhaut.** [Moniliasis of the oral mucous membrane.]—*Hautarzt*, 5, 3, pp. 112–115, 5 figs., 1954.

A case of moniliasis (*Candida albicans*) of the oral mucous membrane in a 51-year-old female is reported from the University Skin Clinic, Hamburg-Eppendorf, Germany. The etiological role of the fungus was established by serological methods and animal inoculation experiments. A partial cure was affected by an eight-week course of daily local applications of malachite green [2, No. 1340], combined with measures to improve the general health.

1316. WITCHELL (I. S.). **Monilial infection of the tonsil.**—*N. Y. St. J. Med.*, 53, 24, p. 3045, 1953.

A case of infection by *Monilia* [*Candida*] *albicans* of the crypts of the faucial tonsils in a 58-year-old female is reported from New York City. A complete cure was effected by topical applications of a 20 per cent. solution of sodium caprylate adjusted to a pH of 7.4.

1317. STRAUBE (W.), HAHN (W.), & SEELIGER (H.). **Zur Klinik und Therapie von Soormykosen der Lunge.** [On the clinical course and therapy of thrush mycoses of the lung.]—*Dtsch. med. Wschr.*, 80, 19, 4 figs. (on p. 760), pp. 753–755, 1 graph, 1955.

A case of pulmonary moniliasis (*Candida albicans*) developing as a sequel to intensive antibiotic treatment for costal pleurisy in a 20-year-old male patient at the Medical Clinic of the University of Bonn, Germany, is fully reported and discussed under the headings of pathophysiological observations, differential diagnosis, and therapy. The administration of solusupronal at a daily dosage of 8 gm. from the 20th to the 35th day of the patient's stay in the clinic is believed to have contributed to an apparently almost complete cure.

1318. STIEFEL (E.), ANDREU URRRA (J.), & LAZARO (J.). **A propósito de la candidiasis pulmonar, antigua moniliasis.** [With regard to pulmonary candidiasis,

formerly known as moniliasis.]—*Rev. esp. Tuberc.*, 22, 218, pp. 225–235, 4 figs., 1953.

In this revision of earlier conceptions of pulmonary candidiasis at the University Medical School, Seville, Spain, the author describes the case-histories of a 56-year-old woman and 25-year-old man first examined in March, 1951, and November, 1945, respectively. In sputum examinations of 65 cases of chronic tubercular infection 12 yielded various species of *Candida*, none of them *C. albicans*. Intradermal injection of *C. albicans* antigen into 32 patients with various diseases gave positive results in four cases of deep pulmonary tuberculosis and one of basal bronchiectasis.

1319. MASDEA (E.). **Su un caso di moniliasi polmonare.** [On a case of pulmonary moniliasis.]—*Arch. ital. Sci. med. trop. Parasit.*, 35, 5, pp. 243–255, 2 figs., 1954. [French, English, and German summaries.]

Full clinical details are given of a case of a middle-aged female patient admitted to hospital in Italy with a history of feverish symptoms, profuse perspiration, and cough with copious expectoration, which had developed about a month previously. The disease was diagnosed as bronchopneumonia. Microscopic examination of the sputum showed the presence of *Candida albicans*, and a serological test for the fungus gave positive results. Antibiotic treatment was at once suspended and iodine and vitamin (compound B) treatment substituted. Marked general improvement occurred and the patient left the hospital. Two years later *C. albicans* was still present, though the patient's general condition was good. It is concluded that the case was one of pulmonary mycosis, caused by *C. albicans* and increased by antibiotic therapy.

1320. FLOCH (H.). **Moniliase broncho-pulmonaire en Guyane Française.** [Broncho-pulmonary moniliasis in French Guiana.]—*Bull. Soc. Pat. exot.*, 45, 5, pp. 620–626, 1952.

From the Institut Pasteur, French Guiana, the author describes two cases of broncho-pulmonary blastomycosis caused by *Candida tropicalis*. The first occurred in 1943 in a male patient at the Hôpital Général, Cayenne, and was an intermediate form of the disease of four months' duration. Intravenous injections of Lugol's iodine solution effected a complete recovery. The second occurred in 1951 in a 49-year-old Indo-Chinese at the Hôpital Jean Martial, Cayenne. It was a more serious case, and resulted in death about 40 days after onset [I, No. 2467].

1321. BRUSORI (G.). **Su di un caso di saccaromicosi polmonare.** [On a case of pulmonary saccharomycosis.]—*Ann. Radiol. diagn., Bologna*, 25, 2, pp. 113–124, 5 figs., 1952–1953.

After briefly discussing from the radiological aspect a number of cases of pulmonary mycosis described in the literature the author gives details of an X-ray examination made [in Italy] of the chest of a female domestic servant aged 59 who complained of pain on breathing and had a yellow expectoration, sometimes streaked with blood. Cultures from the sputum yielded white colonies from which a species of *Saccharomyces* was isolated.

1322. KONRAD (J.) & WINKLER (A.). **Beitrag zum Problem der Moniliasis.** [Contribution to the problem of moniliasis.]—*Derm. Wschr.*, 131, 4, pp. 73–82, 9 figs., 1955.

A case of moniliasis (*Candida albicans*) of over 16 years' duration, involving the oral mucous membrane in a 17-year-old boy, is reported in detail from the Clinic for Dermatology of the University of Innsbrück, Austria, and dis-

cussed in relation to current contributions to the pertinent literature. A histological section of a biopsy from the surface of the tongue, as well as cultures on maltose agar and streaks from the coating of the tongue, revealed numerous staphylococci besides the fungus. The former were disposed predominantly along and partly within the mycelial sheath, where their growth was presumably stimulated by hyphal secretions, and are believed to have been associated with the fungus in the etiology of the disease.

1323. KARCHER (K. H.). **Neue Gesichtspunkte zur Klinik und Pathogenese der Hefeerkrankungen.** [New angles on the clinical aspect and pathogenesis of yeast diseases.]—*Arch. Derm. Syph., Wien*, 197, 1, pp. 51–72, 8 figs., 1953.

Recent developments in the study of pathogenic yeasts, especially *Candida albicans*, including their relation to antibiotics, are discussed in the light of the author's experience at Mannheim, Germany, and numerous contributions to the relevant literature. The clinical features and treatment of four cases are described, three associated with *C. albicans* and diagnosed, respectively, as penicillin allergy in candidiasis with acute spread of the mycosis during penicillin therapy; pruritus ani and anal eczema; lichen ruber planus generalisatus; and one of chronic urticaria attributed to the ingestion of *Trichosporon capitatum* with drinking-water.

1324. KLAPEHEKE (MARY A.) & HARTER (J. S.). **Report of a case of systemic moniliasis.**—*Dis. Chest*, 24, 3, pp. 332–335, 5 figs., 1 graph, 1953. [Spanish and French summaries.]

A case of systemic moniliasis (*Candida albicans*) in a 54-year-old female patient is reported from St. Joseph Infirmary, Louisville, Kentucky, outlining laboratory and clinical data, treatment, the eight-day course in hospital, and autopsy findings. Fungal elements were present in the lungs, spleen (which harboured large colonies), kidneys, and skin.

1325. KLÄRNER (C.). **Über eine generalisierte Soormykose im Erwachsenenalter bei Diabetes mellitus und multipler Sklerose.** [On a generalized thrush mycosis in an adult with diabetes mellitus and multiple sclerosis.]—*Derm. Wschr.*, 131, 15, pp. 361–365, 1955.

An unusual case of generalized thrush [*Candida albicans*] in a 54-year-old female patient suffering from diabetes mellitus and multiple sclerosis is reported from the Municipal Hospital, Berlin-Britz, and discussed in the light of current contributions to the relevant literature. A temporary improvement after local treatment with brilliant green was followed by local relapses, but a cure was eventually effected by penicillin, originally administered for other causes.

1326. MÁRAMAROSI (G.), OLÁH (D.), & TUZA (K.). **Kann die generalisierte Form des Erythema mycoticum infantile mit der Leinerschen Krankheit in Verbindung gebracht werden?** [Can the generalized form of erythema mycoticum infantile be brought into relationship with Leiner's disease?]-*Derm. Wschr.*, 129, 13, pp. 313–321, 3 figs., 1954.

The authors discuss the contention, which is steadily gaining ground, that erythema mycoticum infantile (*Candida albicans*) is etiologically related to Leiner's disease. From their studies at Debrecen, Hungary, they conclude that the two diseases are entirely independent of one another.

1327. DE GAVALLER (B.). **Moniliasis en los recién nacidos.** [Moniliasis in new-born Infants.]—*Rev. Obstet. Ginec., Carácas*, 13, 2, pp. 203–217, 7 figs., 1953.

The author describes the lesions of moniliasis [*Candida albicans*] revealed on autopsy as being responsible for the death of 72 new-born infants [cf. 2, No. 809] in the 'Concepción Palacios' Maternity Hospital, Carácas, Venezuela,

during 1951, and discusses the importance, source of infection, and transmission of the disease in such subjects. In many other cases moniliasis was an indirect cause of death.

1328. GÖTZ (H.) & NASEMANN (T.). **Über den Einfluß der *Candida albicans* auf den Hühnerembryo.** [On the influence of *Candida albicans* on the Hen embryo.]—*Derm. Wschr.*, 130, 29, pp. 774-778, 4 figs., 1954.

Standard methods for the differentiation of strains of *Candida albicans* provide no information on pathogenicity. This may be obtained, however, as shown by experiments at the Dermatological Clinic of the University of Munich, Germany, by inoculation of the chorio-allantoic membrane of the hen embryo, which is overgrown and destroyed by the fungus within a few days [cf. 2, No. 360].

1329. JOHNSON (S. A. M.), GUZMAN (MARGARITA G.), & AGUILERA (CAROLINA T.). ***Candida* (Monilia) *albicans*. Effect of amino acids, glucose, pH, chlortetracycline (aureomycin), dibasic sodium and calcium phosphates, and anaerobic and aerobic conditions on its growth.**—*Arch. Derm. Syph., Chicago*, 70, 1, pp. 49-60, 1954.

At the University of Wisconsin Medical School a turbidimetric technique was used to demonstrate quantitatively the growth of *Candida albicans* in Czapek's medium with various substrates. Of 23 amino acids used as sources of nitrogen, cystine, homocystine, and hydroxyproline were unsatisfactory, whilst phenylalanine, arginine, aminoacetic acid, glutamic acid, tyrosine, leucine, and asparagine supported profuse growth. In the presence of amino acids, growth was proportional to the amount of glucose in the medium, 150 mg. per 100 ml. being the minimum. The organism grows through a wide pH range, with an optimum between 5.1 and 6.4. Chlortetracycline alone, with calcium phosphate, and with esters of parahydroxybenzoic acid produced similar turbidities when *C. albicans* was grown in amino acid media to which they had been added. Growth reached a maximum in media containing the highest concentrations of chlortetracycline, and it is concluded that this drug promotes the development of *C. albicans* and that the 'parabens' do not inhibit it.

1330. JOSSEMERAND (A.), BERTOYE (A.), VIALIER (J.), & PUTELAT (R.). **Signification clinique de la présence de levures dans l'expectoration au cours des pneumopathies traitées par les antibiotiques.** [The clinical significance of the presence of yeasts in the sputum in the course of pneumopathies treated by antibiotics.]—*Lyon méd.*, 87, 9, pp. 197-206, 1955.

Particulars are given of 16 cases of pulmonary disease treated with antibiotics at the Hôpital Edouard-Herriot, Lyons, France, in which [unspecified] yeasts were detected in the sputum, and the possible pathological significance of the organisms is discussed.

1331. BARTELS (H. A.). **Monilial infection of the mouth following antibiotic therapy.**—*Oral Surg.*, 6, 6, pp. 790-796, 4 figs., 1953.

A 35-year-old man visiting a private dental surgery in New York was found to have his tongue and inner side of his cheeks heavily coated with the white, cheesy particles typical of thrush (*Candida albicans*), while the back of his tongue was 'furred' with hypertrophied papillae. The condition followed extensive 'blunderbuss' treatment with antibiotics for various improperly diagnosed complaints, and was promptly relieved when all antibiotics were stopped and intensive local therapy with gentian violet substituted. This case is used as a warning against the unnecessary and unjustified use of antibiotics.

1332. BRATLUND (HARRIET) & HOLTEN (C.). **Moniliasis of the mucous membranes and lungs as a complication of treatment with antibiotics corticotropin and cortisone.**—*Dan. med. Bull.*, 1, 3, pp. 79–84, 1954.

Full clinical details are presented of 18 cases of moniliasis (*Candida albicans*) in 210 patients treated at the Municipal Hospital, Aarhus, Denmark, for various complaints between March, 1950, and February, 1954, with ACTH or cortisone or both and in some instances with antibiotics as well. It is concluded that the view that moniliasis is, generally speaking, only a child's complaint is now obsolete. Of the 18 cases described 11 were mild, but the remainder constituted a very serious complication of the primary disease. It has become obvious that treatment with antibiotics or with corticotropin (ACTH) or cortisone should be applied only in those cases in which it is unquestionably indicated. In three cases treatment with antibiotics only (chloromycin or penicillin) was probably the cause of the moniliasis.

1333. CARRON (R.) & CHAVANIS (P.). **Méningite à *Candida albicans* après antibiothérapie prolongée locale et générale.** [Meningitis caused by *Candida albicans* after prolonged local and general antibiotic therapy.]—*Pédiatrie*, 9, 4, pp. 387–390, 1954.

From Lyons, France, the authors report and discuss the development of meningitis due to *Candida albicans* in a one-year-old girl as a sequel to protracted external and internal therapy with penicillin, streptomycin, aureomycin, and chloromycetin [chloramphenicol]. Discontinuance of the drugs was followed by complete recovery.

1334. CHAPTAL (J.), JEAN (R.), RIOUX (G.), CAMPO (C.), & BERTRAND (M. A.). **Accidents de la thérapeutique antibiotique prolongée : pathologie de la levure chez le nourrisson.** [Accidents of prolonged antibiotic therapy; pathology of the yeast in the Infant.]—*Arch. franç. Pédiat.*, 11, 7, pp. 745–750, 1954.

Full details are given of two cases of moniliasis (*Candida albicans*) in an infants' clinic in Paris supervening in the course of protracted antibiotic therapy for diarrhoea. The antibiotics were temporarily discontinued with beneficial results, but a resumption of the treatment was necessitated by the development of acute staphylococcosis. The combination of antibiotics with an anti-histaminic, multergan, and vitamin B₂ effected a complete cure in both patients.

1335. DUROUX, JARNIOU, GRANOTIER, OUGIER, & LEMAIRE. **Moniliase pulmonaire mortelle à *Candida tropicalis* apparue au décours d'un traitement antibiotique prolongé pour suppuration bronchopulmonaire.** [Fatal pulmonary moniliasis due to *Candida tropicalis* which appeared in the course of a prolonged antibiotic treatment for bronchopulmonary suppuration.]—*J. franç. Méd. Chir. thorac.*, 8, 4, pp. 422–432, 1954.

Following a protracted course of antibiotic therapy with chloromycetin [chloramphenicol], aureomycin, terramycin, streptomycin, and magnamycin for broncho-pulmonary suppuration contracted in Indo-China, a 23-year-old male succumbed to infection by *Candida tropicalis* two months after repatriation at the Percy Military Hospital, Paris.

1336. FALKMER (S.) & WISING (P. J.). **Fatal bronchopulmonary moniliasis.**—*Acta med. scand.*, 151, 2, pp. 117–124, 11 figs., 1955.

A case of bronchopulmonary moniliasis (*Candida albicans*) in a 40-year-old midwife is reported from the Central Hospital, Västerås, and the Department of Pathology, University of Uppsala, Sweden, with complete autopsy findings.

The illness was of the chronic type, lasting for over three years, for the first two of which it was attributed to pulmonary tuberculosis. During the last six months cortisone, streptomycin, penicillin, terramycin, and aureomycin were administered. The only specific feature of the post-mortem examination was the intensive odour of brewer's yeast from the cut surfaces of the lungs. A tendency of the fungus to elicit a giant cell reaction in the tissues was observed.

1337. HOFFER (O.). **Lo stato attuale della chemioterapia locale in stomatologia : batteriostatici, battericidi, fungicidi.** [The present state of local chemotherapy in stomatology: bacteriostatics, bactericides, fungicides.]—*Riv. ital. stomat.*, 9, 5, pp. 551–583, 1 fig., 1954. [German, French, and English summaries.]

The author discusses with numerous references to the relevant literature the present state of knowledge concerning local chemotherapy in odonto-stomatology with special reference to the use of antibiotics and of combinations of antibiotics with fungicides. The effects of the indiscriminate use of antibiotics are considered, and attention is also paid to the secondary effects resulting from their local application and administration *per os*. The known pathological symptoms of moniliasis (*Candida albicans*) in the mouth are described, and details are given of the favourable results obtained by the author with 8-oxy-quinoline in the treatment of stomatitis and glossitis consequent upon the administration of antibiotics. He recommends the use of this substance in conservative therapy and its employment in combination with penicillin + streptomycin + chloramphenicol for the treatment of infected root-canals.

1338. FISCHER (G. W.). **Über den Einfluß von Aureomycin auf die experimentelle Soorinfektion.** [The effect of aureomycin on experimental thrush infection.]—*Zbl. Bakt.*, Abt. 1 (Orig.), 160, 1–5, pp. 275–278, 1953.

The results of experiments on white mice at the Institute for Hygiene, Hamburg, Germany, clearly demonstrated the enhancement by aureomycin of the virulence of *Candida albicans* [2, No. 566], but so far the mechanism of the process remains unexplained.

1339. MCGIVNEY (J.). **Anorectal complications of broad spectrum antibiotic therapy.**—*Texas J. Med.*, 51, 1, pp. 16–18, 1955.

From the author's experience at Galveston, Texas, he concludes that some 65 per cent. of patients receiving therapy with broad-spectrum antibiotics, e.g., aureomycin and terramycin, suffer from side-effects, 38 per cent. of which involve the anorectal region and 20 per cent. the bowel. Of 104 patients treated for intestinal moniliasis [? *Candida albicans*] over a two-year period with sodium caprylate (kaprylex), administered orally in doses up to 400 mg. four times daily, 96 benefited greatly. In the acute stage of perianal cutaneous moniliasis wet dressings and ultra-violet light are used, followed by topical applications of sodium caprylate or Castellani's paint.

1340. RIETH (H.) & SCHÖNFELD (J. H.). **Experimentelle Untersuchungen über die sproßpilzhemmende Wirkung einiger chemischer Verbindungen.** [Experimental studies on the inhibiting action of some chemical compounds on the yeast fungus.]—*Hautarzt*, 5, 3, pp. 120–122, 1954.

Of 35 chemical compounds tested at the University Skin Clinic, Hamburg-Eppendorf, against *Candida albicans* in agar streak cultures, the most effective were N (1)-ethyl-mercury-albucid and malachite green [cf. 2, No. 1315], which caused total inhibition at a concentration of 1 in 100,000, followed by N-methyl-mercury-aristamid, cialit, merkuril (1 in 50,000), 2,6-diiodphenol,

'Bayer' DY 987 (1 in 10,000), 'Bayer' DY 935, 2, 4, 6-triiodphenol, and chinosol (1 in 5,000).

In a parallel series of tests, *Trichophyton mentagrophytes* succumbed to N (1)-ethyl-mercury-albucid and malachite green at 1 in 1,000,000 and 1 in 100,000, respectively, to N-methyl-mercury-aristamid, 2,6-diiodphenol and 2,4,6-triiodphenol at 1 in 200,000, to cialit and merkuril at 1 in 50,000, and to 'Bayer' DY 987, 'Bayer' DY 935, and chinosol at 1 in 20,000.

1341. METZGER (W. I.), WRIGHT (L. T.), & DILORENZO (J. C.). **Effect of esters of parahydroxybenzoic acid on *Candida* and yeast-like fungi.**—*J. Amer. med. Ass.*, 155, 4, pp. 352–358, 3 figs., 1954.

After a lengthy discussion on the occurrence of *Candida albicans* in patients receiving antibiotics, the observation is made that the 'parabens' (methyl- and propyl-parahydroxybenzoate) exert anti-yeast activity *in vivo*. *In vitro* experiments demonstrated a comparable effect, which was not influenced by chlortetracycline. A number of patients were given chlortetracycline with the two esters, and the results of stool yeast counts are given for 17. From these data it appears difficult to prove that the esters control yeast growth, and since the patients with the most yeasts in their faeces were not the ones who developed intestinal side-effects the incrimination of *C. albicans* as a cause of intestinal disorders in chlortetracycline therapy is considered to be unfounded.

1342. MANKOWSKI (Z. T.). **The action of 1, 2, 5, 6-dibenzanthracene-9:10-endo-succinate (sodium salt) on growth of some microorganisms.**—*Growth*, 18, 3, pp. 177–185, 4 graphs, 1954.

In experiments at the Arnold Biological Laboratories of Brown University, Providence, Rhode Island, and the Institute for Cancer Research, Philadelphia, the growth of *Candida albicans*, isolated from a case of bronchial asthma in Paris in 1947, in glucose peptone broth cultures was markedly inhibited by the addition to the medium of a carcinogenic substance, 1, 2, 5, 6-dibenzanthracene-9:10-endo-succinate (sodium salt) at a concentration of 1.4×10^{-3} M. The arrested development of the fungus was accompanied by slight morphological changes which are considered to encourage further study.

1343. DROUHET (E.). **Action de la nystatine (fungicide) *in vitro* et *in vivo* sur *Candida albicans* et autres champignons levuriformes.** [Action of nystatin (fungicidin) *in vitro* and *in vivo* on *Candida albicans* and other yeast-like fungi.]—*Ann. Inst. Pasteur*, 88, 3, pp. 298–314, 2 graphs, 1955.

At the Institut Pasteur, Paris, nystatin [2, No. 738, 1069] at concentrations ranging from 1.56 to 12.5 μ gm. per ml. was not only fungistatic but fungicidal *in vitro* to 35 strains of *Candida albicans*, nine of *C. pseudotropicalis*, four of *C. tropicalis*, five of *C. parakrusei*, two of *C. krusei*, and five of *Geotrichum* sp., its activity being greater in a liquid than in a solid medium.

In tests on rabbits inoculated intravenously with *C. albicans* the parenteral administration of 40 mg. nystatin for five days reduced the mortality rate from 100 to 62.5 per cent. The antibiotic was non-toxic when ingested at the high dosage of 3 gm. per kg. body weight.

In 35 clinical cases of generalized or localized infection by *C. albicans* nystatin was remarkably effective both in the relief of symptoms and in the elimination of the yeasts from the mouth, faeces, urine, or blood four or five days after administration at dosages from 200 mg. to 1 gm. daily for four to five days.

1344. ANTOS (R. J.). **Broncho-moniliasis ; presentation of a case with apparent recovery.**—*Ariz. Med.*, 10, 3, pp. 87–89, 1953.

A case of broncho-moniliasis in a six-year-old white girl is reported from the Good Samaritan Hospital, Phoenix, Arizona. An organism identified at first as *Candida albicans* but later referred to *C. parakrusei* was isolated from the sputum and gastric washings. Potassium iodide therapy resulted in a rapid recovery.

1345. BALLOWITZ (LEONORE) & SCHÄFER (H.). **Das Auftreten von Mykosen bei antibiotischer Behandlung im Kindesalter. Ein Beitrag zur Diagnostik und Therapie.** [The occurrence of mycoses in the course of antibiotic treatment in childhood. A contribution to the diagnosis and therapy.]—*M Schr. Kinderheilk.*, 102, 7, pp. 336–340, 1954.

A case of generalized thrush (*Candida albicans*) in a male infant is reported from the Children's Clinic of the Free University, Berlin. Death occurred at the age of 13 months from influenza. The fungus was isolated from the brain and kidneys. Various therapeutic possibilities are discussed in the light of the relevant literature. Examination of 220 urine specimens from 142 children undergoing antibiotic therapy revealed the fungus in 16; six of the strains proved highly pathogenic to rabbits. *C. albicans* was absent from the specimens of the urine of 800 patients in a control group receiving no antibiotic treatment.

1346. VERGEZ (J.) & SIMON (R.). **Pyonéphrose à Monilia albicans.** [Pyonephrosis due to *Monilia albicans*.]—*Mém. Acad. Chir.*, 79, 17–18, pp. 422–425, 1953.

A case of pyonephrosis in a 1½-year-old male infant at Le Havre, France, is fully reported and discussed in relation to the hypothesis that the massive doses of antibiotics administered for the relief of thrush, following appendicitis, aggravated the severity of infection by *Monilia* [*Candida*] *albicans*. The fungus was isolated in pure culture from pus from the right kidney and proved to be pathogenic to the rabbit and guinea-pig. The child recovered completely after nephrectomy.

1347. SIEBURTH (J. M.) & ROTH (F. J.). **The effect of aureomycin and terramycin on *Candida albicans* in the fecal microflora of chicks and turkey poults.**—*J. Bact.*, 67, 4, pp. 460–464, 2 graphs, 1954.

During investigations at the University of Minnesota, no micro-organisms antagonistic to *Candida albicans* were observed in the intestinal and faecal microflora of chicks and turkey poults inoculated with *C. albicans* or the uninoculated controls. A number of organisms, mostly *Proteus mirabilis*, antagonistic to *C. albicans*, were, however, detected in birds receiving the antibiotic supplemented diet. The faeces of such birds also contained higher yeast population than those of birds receiving the basal diet. Thirty-seven yeasts, all *Torulopsis* (*Cryptococcus*) *molishianus*, were isolated from the faeces of uninoculated chicks fed on the aureomycin supplemented diet. *C. albicans* became established more rapidly and to a higher degree in the intestinal tract of the inoculated birds than any naturally occurring yeast, regardless of the diet. Adding therapeutic levels of the antibiotic aureomycin or terramycin to the basal diet of birds inoculated with *C. albicans* prevented the development of observable physical symptoms and death referable to moniliasis.

1348. PESLE (G.) & MENART (J.). **Traitement des complications mycosiques de l'antibiothérapie par l'acide undécylénique.** [Undecylenic acid treatment of mycotic complications of antibiotic therapy.]—*Bull. méd., Par.*, 67, 22, p. 521, 1953.

Excellent results are reported from Paris in the treatment with undecylenic

acid of the bucco-pharyngeal and ano-vulval forms of moniliasis (*Candida albicans*) [1, No. 963] which tend to develop as a sequel to antibiotic therapy.

1349. FORNI (P. V.). **Micosi sperimentali da Candida. Nota I. Patogenicità e ripartizione della *C. albicans* nell' infezione sperimentale del topo albino.** [Experimental mycoses due to *Candida*. Note I. Pathogenicity and distribution of *C. albicans* in experimental infection of the albino Rat.]—*Med. sper., Ital.*, 23, pp. 593–605, 1 graph 1952. [Received January, 1955.] [English, French, and German summaries.]

In studies conducted at the Institute of General Pathology, University of Turin, Italy, of the quantitative variations of *Candida albicans* in the blood and principal internal organs of albino rats inoculated with a typical strain of the fungus it was found that when the inoculations were made by the subcutaneous and intramuscular routes, only local lesions in the form of granulomata developed, and these tended to regress spontaneously in a few days. When, however, the inoculations were made by the endovasal and endoperitoneal routes the effects were lethal: markedly so by the former route ($DL_{50} = 35,000$), irregularly and less markedly so by the latter ($DL_{50} = 1,250,000$). In a quantitative study of infection, even after three days from the date of inoculation by the endovasal route the fungus could no longer be found in the blood-stream; whereas in the lungs, liver, and spleen the number of colonies increased initially, but on the second day began gradually to decline, though retrocultures from these organs were positive even after one month. In the kidneys *C. albicans* tended to increase progressively to a very great degree.

1350. FORNI (P. V.). **Micosi sperimentali da Candida. II. Influenza di alcuni fattori organismici (età, sesso, equilibrio acido-basico, stato idrico).** [Experimental mycoses due to *Candida*. II. The influence of some organic factors (age, sex, acid-base equilibrium, water condition.)—*Med. sper. Ital.*, 24, 4–6, pp. 481–490, 5 graphs, 1953. [French, English, and German summaries.]

In further work at the Institute of General Pathology, University of Turin, Italy, albino rats of various ages, both sexes, of different acid-base equilibria and of different water condition (i.e. kept on a dry diet, 'hypohydria', or on one which included greenstuffs, the latter group, 'hyperhydria', also being given subcutaneous injections of water), were inoculated experimentally with *Candida albicans* [see preceding entry]. The results demonstrated that infection was (a) more rapid and serious in younger than in older animals, (b) that sex made no appreciable difference to severity of infection, (c) alteration of the hydrogen-ion condition towards either alkaline or acid reactions, but particularly the latter, aggravated infection, as did (d) change in the water condition either towards hypo- or hyperhydria.

1351. ANSEL (M.) & GAUTHIER (C.). **Candidose expérimentale chez la souris par injection intrapéritoneale avec mucine: influence du sexe.** [Experimental candidosis in Mice by intraperitoneal injection with mucin: influence of sex.]—*Ann. Parasit. hum. comp.*, 30, 3, pp. 312–317, 1955.

Generalized infection resulted under certain conditions when a 1 per cent. suspension of *Candida albicans* plus 5 per cent. mucin [1, No. 2050] was injected intraperitoneally into mice. Subcutaneous injection gave only an abscess-type, more or less chronic local lesion, while intra-muscular injection produced only a local condition which dispersed and cleared up leaving no trace. Male mice injected intraperitoneally died within three to five days but in females infection developed in up to 15 days, ending in death or assuming a chronic condition for several months. The simplest and most rapid method of revealing

C. albicans in the lesions was to set out sections of the organs on slides, desiccate them rapidly, and stain them by the May-Grunwald-Giemsa technique. This is essential in cases where microscopical examination is doubtful or impossible.

1352. DEBRÉ (R.), MOZZICONACCI (P.), DROUHET (E.), DROUHET (V.), & HOPPELER (A.), with the collaboration of R. GRUMBACH & R. HABIB. **Les infections à *Candida* chez le nourrisson.** [Infections of the Infant by *Candida*.]—*Ann. Paediat.*, 184, 3, pp. 129–164, 12 figs., 1955. [German and English summaries.]

From the Children's Medical Clinic, Paris, the authors report 11 cases illustrating the importance of infections of the intestinal mucous membrane by *Candida albicans*. The fungus is also responsible for generalized infections, subcutaneous abscesses, and invasion of the urinary tract, which may be complicated by clinical manifestations in various organs, including the lungs and kidneys. The etiology of moniliasis and the relation of antibiotics to its development are discussed and a laboratory procedure for the isolation and differentiation of strains is described. Attention is drawn to the powerful fungistatic action of mycostatin. Reference is made to 73 contributions to the relevant literature.

1353. BARTELS (H. A.). **Black hairy tongue.**—*Oral Surg., U.S.A.*, 7, 5, pp. 559–564, 4 figs., 1954.

A 40-year-old woman living in New York, who suffered from anaemia and had recently received large doses of penicillin following two major operations, was found to have contracted black hairy tongue. The tongue itself had an acid reaction, and the serrated edges of the cornified, epithelial cells or 'hairs' were filled with *Candida krusei*, *C. albicans*, and various bacteria. Daily treatment with gentian violet over a period of months had no effect, but the condition cleared up spontaneously when the patient's nutritional status and her anaemia had been rectified.

1354. TUCKER (E. W.). **Case reports on yeast infections of the bovine udder.**—*Cornell Vet.*, 44, 1, pp. 79–85, 1954.

From the New York State Veterinary College, Ithaca, seven cases of mastitis in cows are reported to illustrate the increasing prevalence of yeast-like fungi, including species of *Candida* and *Trichosporon*, in the etiology of the disease, whether developing spontaneously or in association with antibiotic therapy for other causes.

1355. HAUSER (W.). **Geotrichose der Lunge.** [Geotrichosis of the lung.]—*Ärzt. Wschr.*, 9, 11, pp. 244–246, 3 figs., 1954.

A résumé of the available information on the etiology, geographical distribution, and symptomatology of pulmonary geotrichosis is followed by a report from the University Skin Clinic, Würzburg, Germany, of a case in a 67-year-old farmer who had been undergoing treatment for four years for dermatitis herpetiformis. *Geotrichum candidum* was isolated from the sputum [cf. 2, No. 1012].

1356. KRETZSCHMAR (C.). **Ein Beitrag zu den Mykosen bei Tieren.** [A contribution to the animal mycoses.]—*Mh. vet. Med.*, 9, pp. 274–278, 4 figs., 1954.

From the Institute of Veterinary Pathology, Karl-Marx-University, Leipzig, Germany, the author fully describes and discusses in the light of 11 contributions to the relevant literature a case of generalized mycosis, probably caused by *Mucor* sp., in a pig. Infection originated in the intestine and spread

haematogenously to the liver, lungs, and kidneys. A specimen of generalized mycosis in a roe kid in the collection of the Institute points to the occasional occurrence of fungal diseases in wild animals.

1357. KURREIN (F.). **Cerebral mucormycosis**.—*J. Clin. Path.*, 7, 2, pp. 141–144, 5 figs., 1954.

The autopsy on a five-month-old infant who succumbed at the Royal Infirmary, Worcester, England, to anaemia caused by acute nephritis revealed a sharply demarcated, pinkish-brown area, covered with a fibrinous inflammatory exudate, on the frontal lobe of the left cerebral hemisphere, containing large, branching, non-septate hyphae. Hyphae were also seen in the arterial walls and in the lumina of arteries and veins. The mycelium was considered to be typical of the Mucoraceae. In the absence of orbital invasion it is considered likely that infection was spread by an indwelling nasal tube and reached the brain by way of the ethmoid, olfactory plate, or the nasal veins.

1358. DE MARIA (A.) & TERAMO (M.). **Micetoma del colon sinistro**. [Mycetoma of the left colon].—*Policlinico Sez. prat.*, 61, 43, pp. 1419–1424, 7 figs., 1954. [French and English summaries.]

A rare case of mycetoma (*Candida* sp.) involving the colo-sigmoid junction of the large bowel in a 24-year-old male is reported from the Institute of Surgical Pathology, Rome. A cure was effected by surgical drainage and intensive penicillin therapy, and 21 months after discharge the patient was in excellent health and X-ray examination of the affected tract revealed no abnormalities.

1359. HAUKOHL (R. S.) & SADOFF (H. B.). **Mycetoma—report of a case due to *Monosporium apiospermum* in a native of Minnesota**.—*Wis. med. J.*, 53, 9, pp. 477–479, 3 figs., 1954.

A case of mycetoma pedis in a 20-year-old farm-worker is reported from Milwaukee, Wisconsin, the causal organism being identified as *Allescheria boydii* [2, No. 576]. A puncture wound from flax stubble resulted in a draining sinus, and during the next 1½ years additional sinuses developed, culminating in a firm, doughy, fixed, elongated, soft tissue mass involving the medial malleolus and extending on to the dorsum of the left foot. The granuloma was surgically removed and seven months later the swelling had entirely disappeared.

1360. MÜCKE (D.) & MORCZEK (A.). **Die Wirkung von Röntgenstrahlen auf den O₂-Verbrauch des Myzels von *Allescheria boydii* 1699**. [The action of Röntgen rays on the oxygen consumption of the mycelium of *Allescheria boydii* 1699.]—*Naturwissenschaften*, 42, 16, pp. 467–468, 1 graph, 1955.

In experiments at the Physiologico-Chemical and Röntgen Institutes of the University of Leipzig, Germany, about half of the total inhibition of respiration in mycelial fragments of *Allescheria boydii* (strain 1699 from G. G. Villela, Rio de Janeiro, Brazil) in a 0.9 per cent. sodium chloride solution exposed to X-ray irradiation occurred between 100 and 300 kv. In comparison with the non-irradiated controls, the QO₂ consumption was reduced by 55 per cent. The oxygen consumption of comparable fragments killed by 10 minutes' treating at 100° C. was 2 to 3 per cent. of the normal.

1361. CREITZ (J.) & HARRIS (H. W.). **Isolation of *Allescheria boydii* from sputum**.—*Amer. Rev. Tuberc.*, 71, 1, pp. 126–130, 4 figs., 1955.

The first known instance of the isolation of *Allescheria boydii* from the

sputum in a case of lung disease is reported from the Fitzsimons Army Hospital, Denver, Colorado, in a 56-year-old Spanish-American male. The illness was chronic and progressed very slowly, but showed no improvement after prolonged therapy for suppurative lung disease. It is considered that the evidence is insufficient to establish *A. boydii* as the cause of the disease, but the repeated isolation of the fungus to the exclusion of all other pathologic agents is strongly suggestive of a fungal etiology.

1362. ROTH (M.). **Treatment of onychomycosis.**—*J. nat. Ass. Chir.*, 42, 10, pp. 35–36, 1952.

After stating that the main difficulty in treating onychomycosis [2, Nos. 841, 884] is the density, impermeability, and slow growth of the nail tissue, which prevent fungicides from reaching the causal agents, the author outlines a simple treatment with 'liquid decupryl solution', manufactured by Crookes Laboratories, New York City, and the formula of which is copper undecylenate 10 per cent., undecylenic acid 5 per cent., with dioctyl sodium sulphosuccinate, in a volatile liquid base of tetra-chlorethylene and isopropanal. The solution is applied by the practitioner in the first instance, and the patient is instructed to paint the affected part with the chemical every other day. Revisits to the surgery are necessary at intervals of 30 to 60 days for the removal of diseased nail tissue and debris.

1363. LYONS (R. E.). **Onychomycosis due to *Microsporium lanosum* ; report of a case.**—*Arch. Derm. Syph.*, Chicago, 67, 5, pp. 460–462, 1953.

From the University of Texas School of Medicine the author reports a case of infection of the nails of the fourth fingers of both hands in a 26-year-old female. *Microsporium lanosum* was demonstrated by culture. The nail-beds were scraped and a complex liquid fungicidal mixture was applied twice daily for a month. Six months later there was no evidence of recurrence.

1364. COLLINS (A. P.) & WIESE (G. A.). **The synthesis and investigation of some ethylene bis-dithiocarbamate esters as fungicides.**—*J. Amer. pharm. Ass.*, Sci. Ed., 44, 5, pp. 310–313, 1955.

At the College of Pharmacy, State University of Iowa, some esters of ethylene bis-dithiocarbamic acid were synthesized by condensation of disodium ethylene bis-dithiocarbamate with the appropriate alkyl halide and assayed for activity in comparison with undecylenic acid against *M[icrosporium] audouini*, *A[chorion = Trichophyton] schoenleini*, *M. lanosum* [*M. canis*], *M. gypsum*, and *T. rubrum* on Sabouraud's dextrose agar at pH 5.6. In each case the diallyl ester was superior to undecylenic acid in the inhibition of growth, while promising results were also obtained with the bis-2-hydroxyethyl, bis-3-hydroxypropyl, and di-*n*-propyl esters. There was some evidence of specific variation in reaction to the compounds, especially in the case of bis-2-hydroxyethyl, which exerted a much stronger effect on *M. canis*, *M. gypsum*, and *T. rubrum* than on *M. audouini* and *T. schoenleini*.

1365. BERGMAN (S.). **In vitro studies on antimycotics. A comparison between different methods.**—*Acta path. microbiol. scand.*, Suppl. 104, 127 pp., 15 graphs, 1955.

The following is a brief survey of the information presented in this important monograph from the Dermato-Venereological Clinic, University of Lund, Sweden. The effect of 30 antimycotics on 10 pathogenic dermatophytes (*Trichophyton*, *Microsporium*, and *Epidermophyton* spp.) was studied by seven methods. *T. mentagrophytes* standard strain 9533 (American Type Culture

Collection) proved to be suitable as a test organism. Inoculation with conidia alone gives values indicating a stronger anti-fungal action in most substances than if a total culture is used. A great saving of time can be effected by the use of a conidial 'bank'. The ordinary solvent is alcohol at concentrations ranging from 25 to 95 per cent.; with the addition of polyethyleneglycol as a suspension agent it can also be used for compounds which are only slightly soluble in pure alcohol. Only 10 of the experimental antimycotics were soluble in water above 1 per cent. The use of Sabouraud's medium (40 gm. glucose, 10 gm. peptone, 35 gm. agar, and 1,000 ml. distilled water) is recommended. The pH should lie between 5.5 and 6.5 and 28° C. is the best temperature for incubation, which should last for 14 days, though the agar-cup method of Oster and Godden [1, No. 1791], which is advocated as the best and simplest for screening tests, gives easily readable zones after four. Further testing *in vitro* should be performed by the fungistatic modified method of Schamberg & Kolmer (*Arch. Derm. Syph., Chicago*, 6, p. 746, 1922), involving inoculation with the total culture by wire-streaking, and the use of a medium with and without added serum, and by the fungicidal Public Health method (*Amer. J. publ. Hlth*, 35, p. 844, 1945). For accurate determination five tests in all methods are requisite.

The difficulty of differentiating between fungistatic and fungicidal effects in the several methods tested appears to be insurmountable. None of the preparations investigated could be considered ideal as an antimycotic after critical examination (an opinion in close agreement with clinical experience), though high anti-fungal values were obtained for several, including the mercurials phenylmercuric acetate, phenylmercuric borate, and ethylmercurialbucide (especially the last named), para-chlorothymol, brilliant green, and undecylenic acid.

1366. COUDERT (J.) & MURAT (M.). **Milieux à la chloromycétine, pour l'isolement des dermatophytes et des champignons levuriformes.** [Chloromycetin-containing media for the isolation of dermatophytes and yeast-like fungi.]—*Ann. Parasit. hum. comp.*, 30, 3, pp. 309–311, 1955.

The authors find that Sabouraud's modified medium consisting of 10 gm. peptone, 20 gm. each of glucose or maltose and agar, and 1,000 gm. water plus chloromycetin at a concentration of 330 γ per ml. is excellent for culturing dermatophytes, particularly the suppurative ringworms, and suppressing the growth of the concomitant contaminants, while the same chloromycetin concentration in a medium composed of 40 gm. dried malt, 20 gm. agar, and 1,000 ml. water is especially suitable for isolating yeast-like fungi from stools, pus, and sputum, etc. Both media keep for several months; not only did they reduce contaminants drastically but they also hastened the growth of the pure cultures.

1367. RIETH (H.). **Zur Systematik der Dermatophyten.** [On the systematics of the dermatophytes.]—*Arch. Derm. Syph., Wien*, 199, 2, pp. 134–145, 1955.

The various systems of classification of the dermatophytes in current use are compared and discussed. Notwithstanding all attempts at simplification, mutual agreement between scientists is still greatly hampered by the existence of numerous synonyms and other anomalies. A plea is made for the development, through international co-operation, of a system paying equal regard to saprophytism and parasitism, giving increased attention to the range of variation in characteristics, and based on a careful, well-founded differential diagnosis of species.

1368. PEREIRO MIGUENS (M.). **Etiología de las tiñas.** [Etiology of the tineas.]—Reprinted from *Act. dermo-sifilogr., Madr.* (1954), 8, 18 pp., 1954.

In this paper, based almost entirely on the literature (35 titles), the author discusses the classification of the dermatophytes and their distribution in Spain [2, No. 624]. He gives a list of three species of *Microsporum*, 11 of *Trichophyton*, and one of *Epidermophyton* (*E. floccosum*) which he considers valid.

1369. GÖTZ (H.). **Klinische und experimentelle Untersuchungen über die Hautpilzkrankheiten im Gebiet von Hamburg 1948–1950.** [Clinical and experimental studies on the principal dermatomycoses in the Hamburg district from 1948 to 1950.]—*Arch. Derm. Syph., Wien*, 195, 1, pp. 1–76, 35 figs. (1 col.). 1 graph, 1952.

This important, fully documented survey of the author's studies on dermatomycoses in the Hamburg district of Germany includes sections on their frequency after the first and second world wars, the local fungus flora since the turn of the century, differential diagnostic tests for the classification of cultured fungi, dermatomycoses in the clinic, and the resistance of epidermophytoses to therapy, concluding with an extensive bibliography.

1370. DUTTA (D.), MAZUMDAR (S. K.), & BOSE (S. K.). **Studies on antifungal antibiotics : action against skin pathogens.**—*Sci. & Cult.*, 20, 9, pp. 449–451, 3 figs., 1955.

During a systematic survey, conducted by the Department of Applied Chemistry, University College of Technology, Calcutta, of the distribution of antifungal micro-organisms in Indian fruits, vegetables, and soils 119 antagonists, mostly bacteria, chiefly *Bacillus subtilis* and certain species of *Penicillium*, *Aspergillus*, and *Streptomyces*, were isolated. The most active organisms were tested with the paper disk method (*J. Bact.*, 50, p. 459, 1945) against various skin pathogens. *B. subtilis* (B₃, 9, and 30 and I₉) and *Streptomyces* sp. (U₂, MA₂ and 10) were active against *Trichophyton rubrum*, *T. sulphureum*, *T. schoenleini*, *Microsporum audouinii*, and *Candida albicans*, and *A. nigricans* (P₁) against all except the last mentioned, each of the organisms displaying a wide antifungal spectrum.

1371. JUNG (H. D.). **Zur fungistatischen Wirksamkeit einiger Diphenyldisulfid-Abkömmlinge (Ovitrol).** [On the fungistatic activity of some diphenyldisulphide derivatives (ovitrol).]—*Z. ärztl. Fortb.*, 48, 6, pp. 191–198, 12 figs., 1954.

Following up the promising results of *in vitro* experiments at the University Skin Clinic, Greifswald, Germany, on the fungistatic action of pp'-dichlorodiphenyldisulphide, pp'-bis-oxy-diphenyldisulphide, and ovitrol (the active constituent of novex and D25) [2, No. 187] on five dermatophytes, the three preparations were tested *in vivo*. The first was only moderately effective and the second, though curative, caused severe irritation, so that the majority of the 153 patients were treated with ovitrol only. Satisfactory control was obtained of erythrasma and pityriasis versicolor [*Malassezia furfur*], epidermophytosis (*Epidermophyton* [*Trichophyton*] *interdigitale*), representing the bulk of all cases, favus (*Achorion* [*T.*] *schoenleini*), trichophytia superficialis corporis (*T. mentagrophytes*), and trichophytia superficialis capillitii (*T. gypsumasteroides*) [*T. mentagrophytes*]. Of 34 children who had proved refractory to other methods of combating *Microsporum audouinii*, 17 were cured within nine months by the local application of ovitrol and manual epilation.

1372. WILDE (H.). **Über die Altersabhängigkeit des Pilzbefalles bei Bergleuten.** [On the relation of fungal infection to age in Miners.]—*Derm. Wschr.*, 130, 29, pp. 793–794, 1954.

An inquiry instituted in April, 1952, into the incidence of [unspecified] dermatomycoses among over 10,090 miners in seven pits in the Ruhr, Germany, revealed an average of 70 per cent. infection, with a range of 56 to 84 per cent. in individual locations. In four of the pits, employing 7,373 men, both incidence and severity were found to rise with increasing age in six groups from under 20 to over 40.

1373. EHRMANN (G.) & WIEDMANN (A.). **Netzmittel bei Hautpilzerkrankungen.** [Wetters in dermatomycoses.]—*Derm. Wschr.*, 130, 50, pp. 1327–1334, 2 figs., 1954.

Particulars are given of tests at the University Clinic for Skin Diseases, Vienna, in the treatment of various dermatomycoses by bathing for 15 to 20 minutes in a 0.5 per cent. solution of alkyl-arylsulphonate and soda. Very good results were obtained in 19 out of 33 cases of [unspecified] mycotic eczema. Six out of eight patients harbouring *Candida albicans* also reacted favourably and a number of cases of infection by *Epidermophyton*, *Trichophyton*, and other hyphomycetes and moulds were cured. The mechanism of the action of the wetter is discussed.

1374. ANDERS (W.). **Die Behandlung der Mikrosporie mit der kombinierten Röntgen-Thallium-Epilation nach Buschke-Langer.** [The treatment of microsporiasis with the combined X-ray and thallium epilation according to Buschke-Langer.]—*Z. Haut- u. Geschlechtskr.*, 18, 9, pp. 272–276, 1955.

Excellent control of microsporiasis [*Microsporum* spp.] by means of combined X-ray and thallium epilation, followed by local treatment with myxal [1, No. 2331], is reported from Berlin. It is estimated that since 1945 there have been about 4,000 cases of the complaint in Germany, predominantly north of the Main.

1375. BAIRD (J. W.). **Ringworm of the scalp.**—*J. Tenn. med. Ass.*, 46, 10, pp. 367–370, 1953.

The common types of tinea capitis in the mid-southern United States are caused by *Microsporum audouini*, *M. lanosum* [*M. canis*], and *M. fulvum* [*M. gypseum*], the first-named predominating in Tennessee. Attention is drawn to the increasing prevalence in the State of *Trichophyton tonsurans*, spread largely by labourers from Mexico, where it is the principal agent of the complaint [1, No. 2052]. Information on diagnosis, epidemiology, and treatment is summarized with reference to 15 contributions to the literature on the subject.

1376. BEARE (M.) & WALKER (JACQUELINE). **Non-fluorescent *Microsporum audouini* and canis infections of the scalp.**—*Brit. J. Derm.*, 67, 3, pp. 101–104, 1955.

From the Skin Department, Royal Victoria Hospital, Belfast, and the Mycological Reference Laboratory, London School of Hygiene and Tropical Medicine, three cases of *Microsporum* ringworm of the scalp are reported, which failed to fluoresce under Wood's light. *M. audouini* was isolated from a nine-year-old boy, and *M. canis* from two sisters aged five and eight years. The condition is very rare, and it is considered that non-fluorescence may be confined to non-virulent types of infection, the available evidence suggesting that differences in the host rather than in the fungus are responsible for these minimal infections.

1377. BIRT (A. R.) & WILT (J. C.). **Mycology, bacteriology, and histopathology of suppurative ringworm.**—*Arch. Derm. Syph., Chicago*, 69, 4, pp. 441-448, 5 figs., 1954.

This is a survey of 30 patients from Winnipeg General Hospital, Canada, with various types of suppurative ringworm, of which 11 were due to *Trichophyton faviforme*, six to *T. mentagrophytes*, two to *T. tonsurans*, and one to *Microsporum gypseum*. Some difficulty was experienced in the early stages of the study in growing *T. faviforme*, and some at least of the ten patients from whom no organism was cultured may have been infected with this species. The most satisfactory medium for its isolation was found to be Littman's ox gall agar at 25° C. and Sabouraud's dextrose agar with the addition of 10 mg. cyclohexamide per 100 ml. at 37°. Serial sections of formalin-fixed tissue stained either with haematoxylin and eosin or with periodic acid-Schiff's reagent showed spores in the hair shafts and in the lumen of the follicles, while hyphae were found in the inner cornified layer of the follicles.

1378. CASTELLANI (A.). **Superficial cutaneous mycoses and trichomycoses in old age.**—*Geriatrics*, 10, 2, pp. 86-88, 1955.

Most of the superficial cutaneous mycoses and trichomycoses tend to disappear in the elderly, exceptions being erythrasma (*Nocardia minutissima*), certain forms of moniliasis (*Candida* spp.), and tinea imbricata [*Trichophyton concentricum*: 2, No. 137]. Essential information on the symptoms and treatment of these complaints and others affecting younger people is summarized.

1379. COUDERT (J.) & PRUNIERAS (M.). **Sur le comportement de quelques dermatophytes vis-à-vis du couple: tyrosine-tyrosinase.** [On the behaviour of some dermatophytes towards the couple: tyrosine-tyrosinase.]—*C. R. Soc. Biol., Paris*, 48, 21-22, pp. 1830-1832, 1954.

The experiments of Robinson *et al.*, demonstrating the inhibition of the tyrosine-tyrosinase reaction by *Microsporum audouini* [2, No. 594], were repeated on a larger scale to include a number of other dermatophytes. Besides *M. audouini*, *Sabouraudites* [*M.*] *canis*, *Langeronia soudanensis*, *Ctenomyces* [*Trichophyton*] *mentagrophytes*, *Aspergillus fumigatus*, *Rhinocladium* [*Sporotrichum*] *schencki*, and one of two strains of *T. schoenleini* exerted a comparable effect.

1380. AGOSTINI (A.). **Osservazioni sulla frequenza e sugli attuali aspetti clinici delle epidermomicosi.** [Observations on the frequency and on the actual clinical aspects of the epidermomycoses.]—*Arch. ital. Derm.*, 26, 6, pp. 409-448, 19 figs., 1954.

Following a general introduction to the mycology of the dermatomycoses, the author relates his experience in their treatment at the Dermatological Clinic of the University of Bologna during 1952, 1953, and the first half of 1954, describing some cases to illustrate the various forms of these complaints and reviewing certain contributions to the relevant literature, five pages of references to which are appended.

1381. ALKIEWICZ (J.), MAJEWSKI (C.), & JANIĄK (E.). **On the inhibiting effect of *Pseudomonas aeruginosa* on the growth of pathogenic fungi.**—*Bull. Soc. Sci. Poznań*, Sér. C, 1954, 4, pp. 19-26, 1954. [Abs. in *Ber. wiss. Biol.*, 93, 1-2, p. 137, 1955.]

In mixed cultures of *Pseudomonas aeruginosa* and *Trichophyton asteroides* [*T. mentagrophytes*], *T. crateriforme* [*T. tonsurans*], *T. interdigitale*, and *Achorion* [*T.*] *schoenleini*, the growth of the fungi was inhibited as soon as a blue-green coloration developed in the sphere of activity of the bacterial

colony. At the same time the hyphae became deformed, and when contact was established between the colonies the bacterium grew predominantly alongside the hyphae. Old cultures of *P. aeruginosa* containing a brown pigment exerted practically no inhibitory action on the dermatophytes.

1382. CURRY (J.) & DANIELS (G.). **Ringworm of the scalp in Schoolchildren in the Manchester Hospital Region.**—*Med. Offr.*, 93, 12, pp. 165–171, 4 figs., 4 graphs, 2 maps, 1955.

A summary is given of observations on tinea capitis (*Microsporum audouini* and *M. canis*) among schoolchildren in the Manchester Hospital Region covering the period from 1st January, 1950, to 30th June, 1953. A total of 232 cases yielded 226 cultures of the normal eugonic and six of the dysgonic variety of *M. audouini*. The total number of cases due to *M. canis* was 134, including one double infection by the two species. In Manchester and Salford groups of associated infections occurred in 11 families of two or more children, in a group of three attending the same school, and in three small groups residing in the same neighbourhood. The original source of infection in three patients was traced to infected cats, hair samples of which gave rise to *M. canis* in pure culture. The duration of infection by *M. audouini* ranged from four weeks to three years. A complete cure usually resulted in four to eight weeks after X-ray epilation and fungicidal treatment; in three patients a repetition of the operation was necessary. A period of three to eight weeks generally sufficed for the elimination of *M. canis* by local applications of mild fungicides, varnishes, and paints, e.g., polyvinyl alcohol and collodion. Only 11 cases with clinical symptoms exactly simulating those of *M. audouini* required X-ray epilation.

1383. EVERALL (J.). **Local treatment of tinea capitis and the problem of school attendance.**—*Med. Offr.*, 92, 3, pp. 29–30, 1954.

Of 156 children (108 boys and 48 girls) treated for tinea capitis (*Microsporum canis*) at the General Infirmary, Leeds, from 1950 to 1952, 105 were cured within three months by local therapy with an aqueous ointment containing 10 grains hydrargyrum ammoniatum and other hygienic precautions. Of 49 cases of infection by *M. audouini* (34 boys and 15 girls), only 12 were cured within three months and 28 required X-ray epilation in addition to topical therapy. During the period under review there were also four cases of infection by *T[richophyton] discoides* and one each of *T. quinckeanum* and *T. sulphureum*.

The question of school attendance by children infected with tinea capitis is discussed. It is suggested that public health authorities should remove suspected animals for investigation and treatment.

1384. FRASER (W. N. C.) & HACKETT (A. H.). **A study of tinea capitis.**—*N.Z. med. J.*, 53, 294, pp. 162–165, 1954.

A survey of 500 school children between the ages of two and twelve years in the Auckland metropolitan area, New Zealand, for the incidence of tinea capitis [*Microsporum canis*: 2, No. 1104] showed that the infection is rare during summer, only one case being found by Wood's filtered light; that it is mostly transmitted from animal to human and seldom from human to human; that living-conditions are of little importance in the transmission of the disease, children from both prosperous and poor homes being infected; and that children need not be kept away from school, since little or no infection is propagated among them. The virulence of the disease appears to vary from person to

person, even though infected from the same animal, and such lesions under the same treatment took varying times to heal. No case of the highly infectious *M. audouini* has been confirmed in New Zealand.

1385. DWYER (H. L.). **Ringworm of the scalp in Schoolchildren.**—*Postgrad. Med.*, 16, 2, pp. 133–136, 1 fig., 1954.

General information on the characteristics, diagnosis, treatment, and control problems of tinea capitis in schoolchildren is summarized from the author's experience in the Kansas City Health Department, Kansas City, Missouri, where the incidence of *Microsporum audouini* and *M. lanosum* [*M. canis*] is about equal. Reports of outbreaks in widely separated areas of the United States indicate that the former species predominates in the east and the latter in the mid-west, while *Trichophyton tonsurans* appears to be increasing in frequency in the south-west.

1386. FRANKS (A. G.) & TASCHDJIAN (CLAIRE L.). **Unusual site of infection with *Microsporum audouini*.**—*Arch. Derm. Syph.*, Chicago, 69, 4, pp. 498–500, 1 fig., 1954.

A case of infection of the pubic region by *Microsporum audouini* in a 17-year-old girl is reported from New York University Hospital. The patient's brother had been affected two months earlier by tinea capitis from which the same organism was recovered.

1387. HOPKINS (J. G.), LINGAMFELTER (C. S.), KIESSELBACH (M. R.), & HAMILTON (O. A.). **Treatment of tinea capitis with salicylanilide preparations.**—*Arch. Derm. Syph.*, Chicago, 67, 5, pp. 479–483, 1953.

The causal organism was identified in 263 out of 326 cases of tinea capitis attending the Vanderbilt Clinic, New York, from 1946 to 1949, as *Microsporum audouini*. From the tabulated results of the treatment of 80 cases with salicylanilide ointments it is concluded that some 60 per cent. of all cases of the complaint are amenable to this form of therapy.

1388. DOLFEN (W.). **Erfahrungen bei der Behandlung von Dermatomykosen in einem Staub- und Hitzebetrieb.** [Observations on the treatment of dermatomycoses in a thermal bathing establishment.]—*Zbl. Arbeitsmed.*, 4, 3, pp. 73–74, 1954.

Bradex-vioform ointment (Ciba A.-G.) [2, No. 885 and next entries], applied twice daily, is reported to have cured [unspecified], mostly interdigital dermatomycoses in 22 out of 52 employees in a thermal bathing establishment in the Cologne district of Germany, and to have effected a considerable improvement in a further 24.

1389. GROTTENMÜLLER (K.). **Erfahrungen bei der Behandlung von Dermatomykosen.** [Experiences in the treatment of dermatomycoses.]—*Dtsch. med. Wschr.*, 79, 21, pp. 851–852, 1954.

During the past 1½ years 74 cases of dermatomycosis were treated with bradex-vioform [see preceding and next entries] at the Municipal Hospital, Stuttgart-Bad Cannstatt, Germany. There were 27 cures, 25 of epidermophytoses of the hands and feet and one each of [unspecified] mycotic eczema and microsporiasis of animal origin [*Microsporum canis*], and 36 improvements, 31 of epidermophytoses, three of mycotic eczema, and one each of superficial trichophytosis and *M. canis*.

1390. VELTMAN (G.). **Zur Behandlung der Epidermophytien mit Bradex-Vioform.** [On the therapy of the epidermophytoses with bradex-vioform.]—*Derm. Wschr.*, 129, 15, pp. 363–370, 4 figs., 1954.

Excellent results are reported from the University Skin Clinic, Bonn, Germany, in the therapy of epidermophytoses in 110 patients with bradex-vioform [see preceding entries], details being given of three cases involving the hands and feet.

1391. VANBREUSEGHEM (R.). **Addendum à l'étude sur la morphologie parasitaire de l'agent du pityriasis versicolor : *Malassezia furfur*.** [Addendum to the study on the morphology of the agent of pityriasis versicolor: *Malassezia furfur*.]—*Ann. Soc. belge Méd. trop.*, 34, 4, pp. 499–500, 2 figs., 1954.

Two figures portray, respectively, (a) the schematic development of the phialospore of *Malassezia furfur* [2, No. 1091] up to the formation of the phialide system, and (b) the following stages in the development of the fungus: (1) phialospores in course of germination; (2) phialides; (3) bunches of phialospores at the tip of a phialospore [? phialid]; (4) the viscous substance uniting the phialospores; (5) groups of phialids; and (6) free phialospores.

1392. ROBINSON (H. M.), FIGGE (F. H.), & BERESTON (E. S.). **Inhibition of tyrosin-tyrosinase reaction by *Microsporum audouini* ; preliminary report.**—*Arch. Derm. Syph.*, Chicago, 68, 4, pp. 428–429, 1953.

In vitro studies at the University of Maryland School of Medicine demonstrated that *Microsporum audouini* produces a substance which inhibits tyrosinase (prepared from potato juice) and prevents melanin production when added to tyrosine.

1393. ROBINSON (H. M.), FIGGE (F. H.), & BERESTON (E. S.). **Fluorescence of *Microsporum audouini*-infected hair. II. Cultural studies.**—*Arch. Derm. Syph.*, Chicago, 68, 3, pp. 311–313, 1953.

At the University of Maryland School of Medicine a protein-free medium rich in vitamins and minerals, containing added amino acids, was inoculated with cultures of *Microsporum audouini* [2, No. 592] and with hairs infected with the same fungus. Growth occurred in every case but no fluorescence was observed under Wood's light, nor could it be induced by the addition of ammonium nitrate, nucleic acid, and melanin. The addition of certain porphyrins to the medium inhibited the growth of the organisms. Infected hair more than five years old was fluorescent, but the fungus could no longer be grown from it. It is concluded that fluorescence does not necessarily imply the presence of a viable fungus, but that a chemical compound is produced in infected hair which does not undergo rapid degeneration.

1394. JONES (R. W.), HOLSINGER (R. E.), ARMSTRONG (B. H.), & LOHRMAN (ROSEMARY). **Cultural survey of tinea capitis in central Indiana.**—*Arch. Derm. Syph.*, Chicago, 69, 4, p. 494, 1954.

Of the cultures from 454 cases of tinea capitis examined at Indianapolis General Hospital, 87.2 per cent. yielded *Microsporum audouini*, the remainder being assigned to *M. lanosum* [*M. canis*] (6 per cent.), *M. gypseum* (2.6), *Trichophyton tonsurans* (2.2), and *T. mentagrophytes* (2).

1395. KAY (R. G.). **Tinea capitis due to *Microsporum audouini*.**—*N.Z. med. J.*, 53, 295, pp. 252–253, 1954.

Microsporum audouini [cf. 2, Nos. 1100, 1384] is reported for the first time in

New Zealand causing tinea capitis on three young Auckland children belonging to the same family. Satisfactory control was obtained with X-ray therapy and the use of adhesive plaster to remove the hair. Weekly examination of the scalp under Wood's light and manual epilation in persistent cases, followed by daily shampooing and treatment with a mild ointment, e.g., 5 per cent. ammoniated mercury, are recommended. Infected children should not attend school and isolation should be attempted in all cases if possible, but certainly in persistent ones.

1396. KOMURO (S.), AOKI (Y.), & ODASHIMA (S.). **On *Microsporon sapporensis*.**—*Sapporo Med.*, 3, 1-2, pp. 1-13, 13 figs., 1 map, 1952. [Received 1955.]

In an investigation carried out in 1948 on the prevalence of ringworm among 31,691 schoolchildren and 309 outpatients in five regions of Hokkaido, Japan, 157 cultures of *Microsporon sapporensis* were obtained from all parts of the province except the eastern section. Of the children examined, 0.39 per cent. were infected, mostly in the eight-year-old group. Of 321 cats examined, 106 were infected by the same fungus, and in each district the ratio of infected to healthy cats was directly related to the prevalence of [human] infection. In one instance, four girl students sharing the same dormitory had infected their cats. Inoculations on human adults by scraping the forearm and applying an emulsion of the fungus induced an intense hyperaemia with numerous vesicles. The inoculation of cats induced localized inflammation of the back in three days, followed four days later by loss of hair. Spore sheaths were observed on some roots, as in naturally infected cats, and the fungus was reisolated from fallen hairs. Guinea-pigs and rabbits were also successfully inoculated, though reaction in the former was distinct. The evidence indicated spread of infection in three ways: among children, among cats, and among children and cats. This is stated to be the first record in Japan of a ringworm epidemic caused by a *Microsporum* of animal origin.

1397. KURODA (T.). **Serological studies of experimental trichophytosis. I. Serological reaction using a mechanically prepared antigen.**—*Ann. Tuberc., Tenri*, 4, 1, pp. 15-19, 1 diag., 1953.

At the Pharmaceutical Research Institute, Osaka Medical College, Japan, a four-week-old dried culture of *Trichophyton asteroides* [*T. mentagrophytes*] was crushed in a specially constructed apparatus consisting of a metal cylinder and piston. A suspension gave a strongly positive agglutination with homologous rabbit antisera in dilutions of 1 in 160 or 1 in 320. Antigen prepared in this manner may be suitable for delicate serological studies of experimental trichophytosis [see next entry].

1398. KURODA (T.). **Serological studies of experimental trichophytosis. II. Antibody production in infected Rabbits.**—*Ann. Tuberc., Tenri*, 4, 1, pp. 20-25, 3 graphs, 1953.

In further studies at the Pharmaceutical Research Institute, Osaka Medical College, Japan, the author studied the agglutination and complement-fixing properties in rabbits infected experimentally with *Trichophyton asteroides* on the dorsal skin by an antigen previously described [see preceding entry]. Both tests were conducted quantitatively by the serum dilution technique to determine the relative antibody concentration in the circulation. In both cases antibodies were produced, but as their titres did not agree throughout the observation period they must differ in their nature. The peaks of antibody production corresponded roughly with those of disease severity, and were influenced by antigen dosage and the skin area inoculated.